# Volunteer Firemen

FEBRUARY 1945

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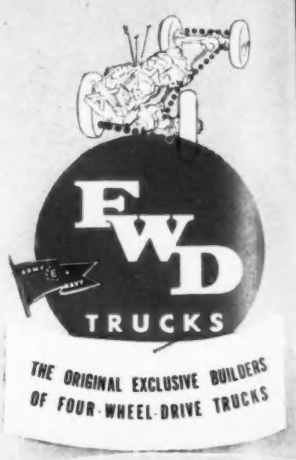

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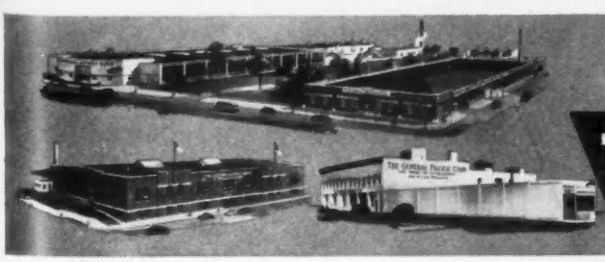

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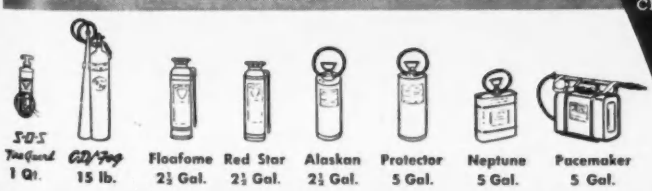

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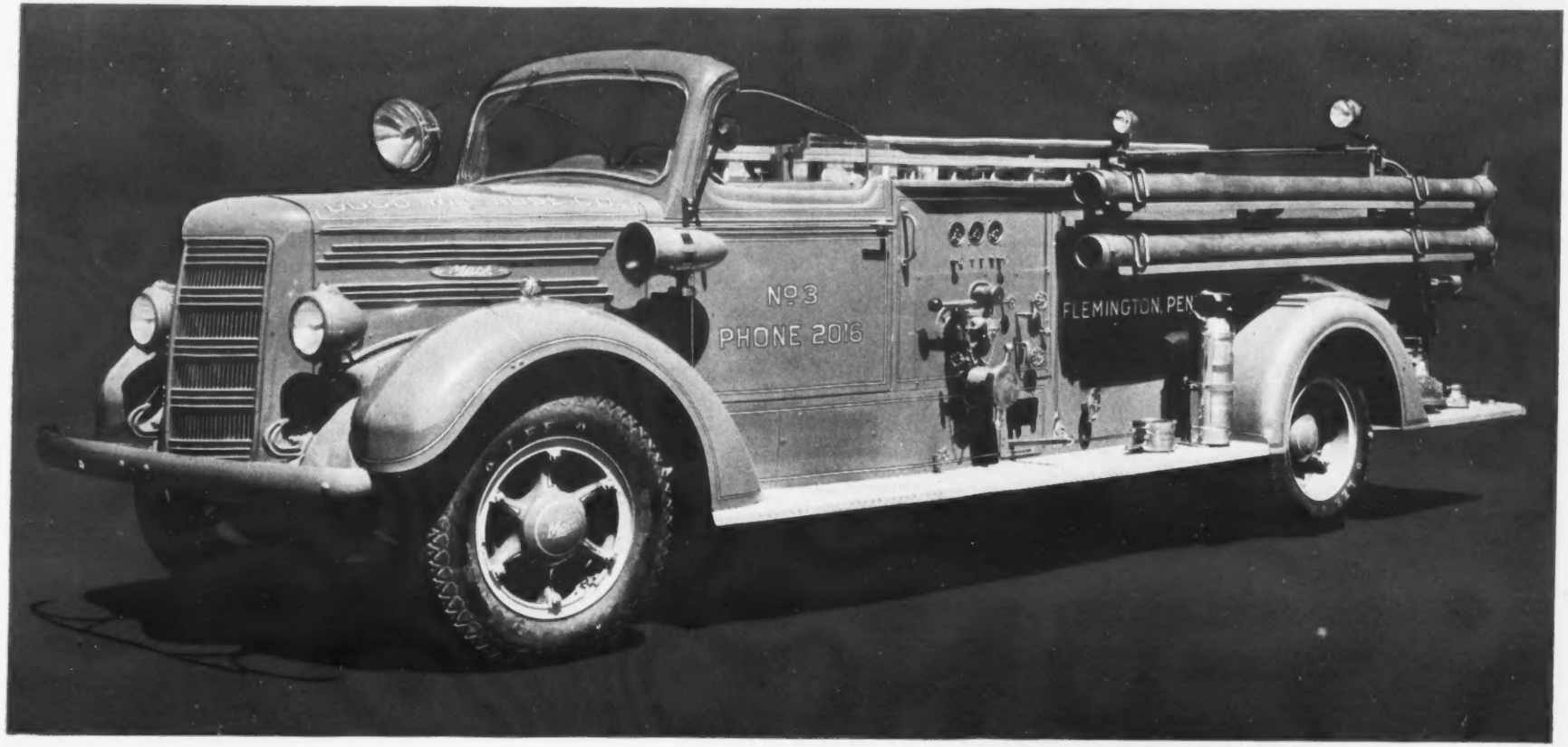


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# Volunteer Firemen

Volume 12 Number 2

Published by the National Fire Protection Association, a voluntary non-profit organization, 60 Batterymarch St., Boston 10, Mass.

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THE VOLUNTEER FIREMAN

***"A fireman at heart, a fireman in reality — a punching, driving, working fire chief whose department and leadership have built character in men and developed the nation's finest young firemen."***
*VOLUNTEER FIREMEN, October 1943.*

The Editors of VOLUNTEER FIREMEN regretfully report the death of Chief J. Ray Pence of the Stillwater, Oklahoma, Fire Department on January 17th. No adequate tribute is possible to the man who made so many notable contributions to the advancement of the fire service during the thirteen years that he was chief at Stillwater. His comparatively small fire department became known as "The West Point of the Fire Service" and with his active cooperation the first firemanship training course of college grade was organized. He encouraged a spirit and attitude among those who came in contact with him which was always constructive.

THE cover photo this month (*Chicago Sun*) shows the bulletin board of a Chicago church after the blaze-beaters of the Windy City saved the edifice from destruction by a severe exposure fire. The gratitude of the Chicago firemen for these kind words was expressed for them to the pastor, Dr. William C. Howard, by Chief Fire Marshal Anthony J. Mullaney, an N.F.P.A. director.

Firemen, who as boys resisted the lure of chasing brush fires to attend Sunday school, may recall that one of the best known lessons of sacred scripture was the miracle of the healing of the ten lepers of whom only one returned to give thanks to the Master (St. Luke 17:17). No doubt Dr. Howard had in mind the importance of expressing appreciation and thankfulness when he paid his tribute to the Chicago firemen.

The appropriateness of his tribute is certainly evident to anyone who has had experience with fighting church fires. Few other types of structure succumb to fire more readily or present more difficult fire-fighting problems. Even churches with beautiful stone walls, present such fire-fighting problems as high ceilings, excessive fire areas, combustible trim, partitions, lofts, and improperly arranged heating equipment.

AMERICAN fire fighters have paid a heavy price in sacrifice and punishment while protecting churches from fire. Your editor recalls a beloved battalion chief who devoted his off time doing good deeds about his battalion and was particularly solicitious about the safety of inmates of charitable institutions located in his command. One day he made a long run from which he never returned. The fire was in a little Negro church of frame construction. Although the fire was much advanced, the chief hurried inside to see if it could be cut off. The roof came down and the chief s life was lost protecting the place of worship of another race and creed than his own — truly emblematic of firemen's self-sacrifice.

At another church fire years ago, a volunteer fire captain arrived to find the structure completely shrouded in acrid smoke. Not a hose line was reaching the seat of the fire. In telling how the officer took the pipe and plunged inside, the rector of the church reported: "Bert's supplications to the Almighty were in powerful language, but they were effective."

Space does not permit us to report all of "the other nine" church fires for which tributes should be paid to firemen. We can recall one case where flames had spread up partitions into a cockloft over the church auditorium. Unhesitatingly the firemen raised a ladder from the balcony and took a line into that loft which was then like a superheated oven. The church was saved, but in this instance there was little appreciation of the firemen's feat. The old church was torn down and the trustees took the fire insurance money to build in a new location instead of repairing the damage. Most firemen would find a special satisfaction in successfully bringing a church fire under control.

THE mystery of the missing Vallejo, California, fire station has been solved. The station, pictured in the December issue of VOLUNTEER FIREMEN, has been reported as located in Richmond, California.

FIRE losses in the United States during 1944 were $423,458,000, higher by 11 per cent than the 1943 losses of $380,235,000, according to figures released by the National Board of Fire Underwriters. December losses alone totaled $48,694,000, the highest for any month since March, 1932. December, 1943, losses were $47,718,000, a 2 per cent difference.

In Canada, the fire losses for December reached $3,841,900 as compared with the 1943 figure of $3,615,075. The Canadian total for 1944 was $48,562,450.

# What Would You Tell Our Allies About the American Firemen?

by WARREN Y. KIMBALL, Editor

**The following report was prepared in answer to a request from a British fire service publication, for a description of the North American fire service. The chief differences between the two are that, since the war, the fire service of Great Britain has been reorganized under national control. British fire stations are usually much larger than those in the United States and Canada so that each station can handle ordinary fires without calling outside help. Such stations frequently contain apartments for the families for fire department personnel. Under the British system, fire officers who are properly qualified, frequently transfer from city to city as they receive promotions.**

**The fire apparatus used in Great Britain basically is not different from the American. The chief units are the sedan type pumper and turntable ladder trucks. First aid water tanks carried on the apparatus are similar to American booster tanks.**

THERE are some 15,000 fire departments on the North American continent, exclusive of Latin America. Of these, approximately 1,000 consist primarily of full-time paid firemen. Some 14,000 organizations are wholly or in part on a part-time basis with paid call men, or volunteer fire fighters who receive no compensation. In general, the full paid fire organizations are found in municipalities of over 10,000 population of which there are some 1,077 in the United States and 86 in Canada. However, some primarily volunteer fire forces are found in cities up to 100,000 population although in such cases fire apparatus drivers and a few officers are usually full-time employees.

In the United States and in Canada, fire protection is a local function. The United States are made up of 48 self-governing states. The national government has authority only in such matters as national defense, currency and foreign affairs delegated to it by the states in a written constitution. In all other details of government such as police and fire protection, and education the states are independent and sovereign. It is not likely that fire protection will become nationalized in the United States.

In most cities the fire force is a "department" of the municipal government under a chief or fire commissioner responsible to the mayor or city manager. In fewer cities it is a "fire bureau" under a department of public safety. The term "fire department" is also retained in the case of rural fire districts, county fire districts, and volunteer fire associations which may or may not be supported by tax monies. The term "fire brigade" is used only to describe the numerous professional or part-time fire forces maintained by industrial and other private organizations.

Most American cities are comparatively new when judged by European standards. The chief structural material employed has been timber from the forests which in earlier days were even deliberately burned to clear the land. Even in congested districts where masonry exterior walls are required, interior framing of structures is chiefly of wood. Only the larger and more modern public, industrial and mercantile structures are commonly of fire resistive construction. Except in the older, eastern seaboard communities where they have been largely outlawed, wooden shingle roofs, which have been largely responsible for many sweeping conflagrations, are still found in considerable numbers.

It is estimated by the National Fire Protection Association that over 668,000 fires caused over $400,000,000 loss in the United States in 1943. Each of the past two years (1943 and 1944) have seen over 100 individual fires with losses exceeding $250,000. It is not generally appreciated that North American weather conditions play a leading roll in the high rate of fire incidence. Long periods of extremely dry weather with temperatures mounting at times to 100 degrees F. are not uncommon in summer. In many communities grass and brush fires are the leading source of fire calls. At times these calls become so numerous that even the larger departments must detail men and apparatus from high value districts to outlying areas. Individual grass and brush fires driven out of control by the high winds have destroyed hundreds of buildings. American fire appliances carry special grass and brush fire fighting equipment.

In the winter, in the northern states and in Canada, temperatures may drop many degrees below zero F. Heating systems in all buildings must be operated constantly for 7 months or more each year. Fires due to overheated heating equipment are common and spread rapidly through structures which are thoroughly dried.

With fire such a major problem in American life, interest in fires is a subject that has a large following. Fires draw large crowds and are reported in detail in the newspapers. Many persons discuss and criticize fire fighting techniques, frequently to the disgust of professional firemen.

There are perhaps 75,000 or more full-time firemen chiefly employed in the larger cities, and approximately ten times that number of volunteer or part-time "call" firemen. Individual volunteer fire companies may have as many as 500 members, although perhaps only 20 to 40 of the younger members are listed as active firemen in normal times. There is frequently considerable social distinction in belonging to a volunteer fire company. It is reported that Franklin D. Roosevelt is a member of his home town fire company at Hyde Park, N. Y.

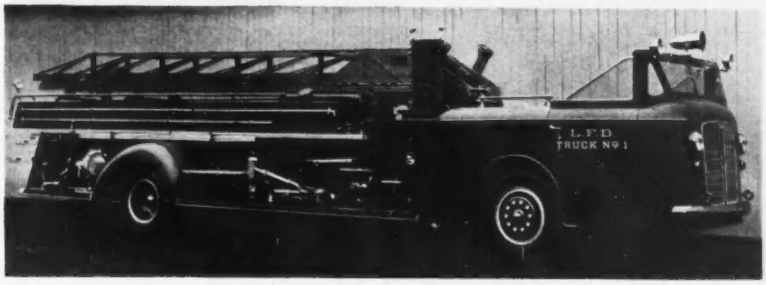
In some states such as New York and Pennsylvania, where firemen's organizations number their members near the quarter-million mark, the firemen wield considerable voting strength in matters related to their welfare. In most cities the paid firemen are organized as local unions of the International Fire Fighters' Association, an affiliate of the American Federation of Labor.

Most permanent firemen work some variation of the 2 platoon system. In the middle western states, 24-hour shifts on and off duty are preferred. In the eastern departments, a few periods of day duty are followed by an equal number of periods of night duty. The complete cycles of day and night duty may vary between 6 and 14 days in different communities. Prior to the war, New York City and a few other fire departments worked a 48-hour week or so-called "3 platoon system" (8-hour day). Manpower shortages have forced a temporary reversion to two platoons for the duration.

A straight 2 platoon system averages 84 hours a week, but most departments grant days off to reduce the time worked to between 64 and 72 hours. In many cities no 24-hour shifts are worked as the men are given a day off after finishing a day tour before reporting for night duty. The firemen on the night shift sleep in dormitories in the stations. Officers are provided

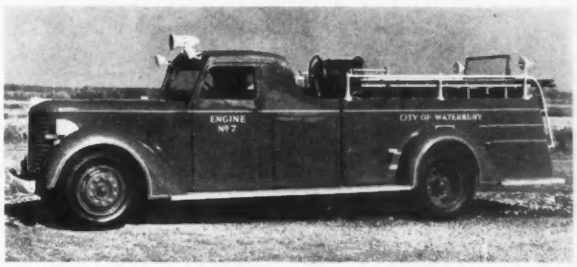
with individual suites. Even the smaller stations usually contain well equipped kitchens, smoking and reading rooms and other facilities for the comfort of the men.

Salaries vary with the size of the city and relative cost of living in the nearby geographical area. Salaries of first class firemen vary from an unusual low of $600 to well over $3,000 a year. In large cities the present average would be approximately $2,500. Many departments provide a clothing allowance for dress uniforms and provide rubber boots, rubber or waterproof canvas fire coats, and leather, metal or fibre helmets for fire duty.




**Modern 65-foot "junior aerial" ladder truck carrying approximately 230 foot ground ladders, assorted tools, and rescue devices. It also carries a water tank and reel of first aid hose. This is typical ladder company equipment for a department assigned to residential and minor mercantile areas.**

America does not have large fire stations as found in Europe. The basic American fire unit is the "engine company" usually located in a small neighborhood fire station. The company consists of 10 to 20 men under a captain and one or more lieutenants. Four to 6 company members are on duty to respond with the apparatus which basically consists of a 750 or 1,000 G.P.M. pumping engine, carrying 1,000 feet 2½-inch doubled jacketed cotton rubber lined hose, 200 feet 1½-inch c.r.l. hose and 200 feet of ¾- or 1-inch first aid "booster hose" supplied by an 80- to 100-gallon water tank. In high value districts, a separate hose truck with water tank and turret nozzles is commonly provided with the engine companies. In a number of the largest cities, large fire service mains provide direct fire streams at pressures up to 300 pounds p.s.i. with pressure maintained from central pumping stations, with capacities varying between 2,000 to 36,000 G.P.M. Standard mobile fire pumpers deliver their capacities at 120 pounds p.s.i., 50 per cent of capacity at 200 pounds, and 33⅓ per cent at 250 pounds.

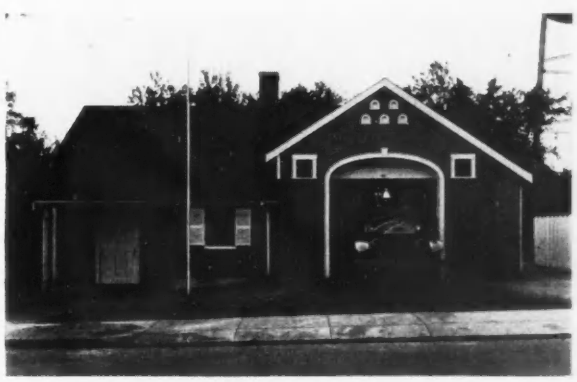



**Typical 750-gallon pumper with a 7-man cab. Such a machine carries 1,000 or more feet of 2½-inch hose; 200 feet of 1½-inch c.r.l. hose, 200 feet of 1-inch "booster hose" supplied from a 100-gallon water tank on the apparatus. Three or more of such unuts usually respons to first alarm signals from fire telegraph boxes.**

About one-third to one-half of the fire stations also house "ladder" or "truck" companies. Ladder trucks usually carry mechanical "aerial" ladders varying from 65-foot "junior aerials" to 85- and 100-foot ladders. These are equipped with ladder pipes to serve as water towers. The same trucks carry from 230 to 400 feet of manually raised ladders, the longest of which are usually 50- or 55-foot extension ladders. The larger ladder truck vehicles may be more than 60 feet long and the rear end is controlled by a second steering wheel operated by a "tillerman."

Specialized units such as rescue or floodlight vans are usually located at headquarters stations. Companies are grouped in districts or battalions under battalion chiefs who in turn report to division or deputy chiefs. Initial response to a fire call in high value districts would be perhaps a dozen appliances from six or eight companies in various stations. Response is in accordance with pre-arranged assignments and is controlled by the central fire alarm office of the city. These "first alarm" forces are commanded by battalion or deputy chief officers who respond to alarms in their areas in cars equipped with 2-way radio. American cities are covered with numerous fire alarm telegraph boxes for public and fire department use. Printed assignments for response are based upon known hazards in the vicinity of the "box" with heavier response at night when the life hazard is greatest. A high percentage of the calls received prove to be malicious mischief.

All American fire officers both in company and chief grades must come up through the ranks of their local department. Promotions are based upon competitive written examinations which are considerably weighted in favor of seniority in the fire service as well as credit for military service. Persons brought in from outside the profession to command local fire organizations inevitably find that promotion from the ranks is an unwritten rule in the American fire service, which no person, however competent, can successfully violate. After 25 years service and upon reaching 55 or 60 years of age, firemen, including officers, retire at one-half to three-quarters of their highest annual pay. Pensions are also granted for disability and for widows of firemen killed in performance of their duty. *(Continued on page 24)*



**Typical bungalow fire station in a residential district of a city of 80,000 population. The station is equipped with a 750-gallon per minute pumper, one officer and three men on each shift. There are bedroom facilities, attractive kitchen with electric refrigerator, a recreation or "smoking" room, and a watchroom with fire alarm receiving instruments. In the basement is an attractive community hall with a piano and fireplace.**

# U. S. Army Fire Fighters La

**"The Army Hour" in its world-wide broadcast a few weeks ago described the Army Engineer Fire Fighting School at Fort Lewis, Washington, where G. I. firemen are trained to fight fire under fire. The instructors include former fire chiefs and civilian firemen. This radio script is reviewed here through the courtesy of Col. E. M. Kirby, Chief, Radio Branch, War Department Bureau of Public Relations. The Editors of Volunteer Firemen also wish to thank Major David F. Glines, Corps of Engineers, former Commandant of the School, for the pictures of fire fighting instruction and other helpful information. Major M. L. Gilbreath, C.E., is now in command.**

ANNOUNCER: In the war zones, one of the most powerful and destructive forces our fighting men have to overcome is fire. The job of training a G.I. Fire Department was assigned to the Corps of Engineers, who now operate a fire fighters school at the Army Service Forces Training Center, Fort Lewis, Washington. For the story of this school the "Army Hour" takes you to the great Northwest.

ANNOUNCER: This is the Engineers' Fire Fighting School, Army Service Forces Training Center, Fort Lewis, Washington.

(Bugle "Fire Call.")

VOICE: Fire call! Fire call!

(Trucks start up on call and rush past mike with sirens going full blast.)

ANNOUNCER: "Fire call," and the screaming sirens of the fire trucks welcome you to the Engineers' Fire Fighting School. At this school, the only one of its kind in the country, our fighting men are trained in fire fighting for overseas duty with every branch of the Army. Fire dropping from the skies on supply depots, docks, towns, fuel storage tanks; fire streaking from tracer bullets, shells, grenades; fire clawing at our Army's lifeline constitutes one of our enemies' greatest weapons against us. In this war, more than any other, fire is now a terrible threat to both soldier and civilian alike.

London during the blitz was a raging inferno, and if it were not for 30,000 volunteer fire fighters, plus trained fire fighters in every household, London would have burned to the ground. Early in this war the War Department recognized the need for trained fire fighters. Fire fighters to help the Air Forces control crash landings at air fields; fire fighters to storm the beachheads with the ground troops as they did at Anzio; fire fighters to protect our vast supply depots and ammunition dumps from flaming obliteration.

The first fire fighting school was activated in June of 1943, at Camp Ponchartrain, Louisiana, where the first units were trained, and then moved to Fort Lewis, in July of this year. To give you some idea of the effectiveness of trained fire fighters attached to a combat unit, there is this report from the War Department.

ANNOUNCER II: In the invasion of Sicily, one platoon of fire fighters, consisting of 28 men and 1 officer, controlled raging fires in a city of 300,000.

Other units have been cited for gallantry in action, and in every way these men bring new glory to the history of American soldiery! And now we'd like you to meet one of the instructors at the school. He's a staff sergeant back from fire fighting duties overseas: Sgt. William Mills of Oyster Bay, Long Island.

Sergeant, where did you first see action overseas?

MILLS: In North Africa. My outfit landed in May, 1943. We were attached to the Corps of Engineers.

ANNOUNCER: What kind of a greeting did you boys get from the troops stationed there?

MILLS: Well, they'd ask us, "What outfit are you in?" We tell 'em "fire fighters." Well, because they figured us for a G.I. fire department with an easy job we took a lot of kidding at first. Guess they thought all we did was sit around playing checkers waiting for the fire alarm.

ANNOUNCER: What made them change their minds?

MILLS: We took the doubters along on a couple of fires, and that was the end of the kidding. Fighting a fire is never a picnic. When you're fighting one while under an attack by the enemy, that goes double.

ANNOUNCER: Sergeant, I understand back home in Long Island, you were a member of the Volunteer Fire Department, from 1925, until you enlisted in the Army in 1942. In your 19 years as a fireman, what would you say was the toughest fire you ever fought?

MILLS: That's easy. It was in the harbor of Palermo in August, 1943. The Germans attacked the dock area from the air with bombs and incendiaries while we were landing. We fought that dock fire for 36 hours without rest.

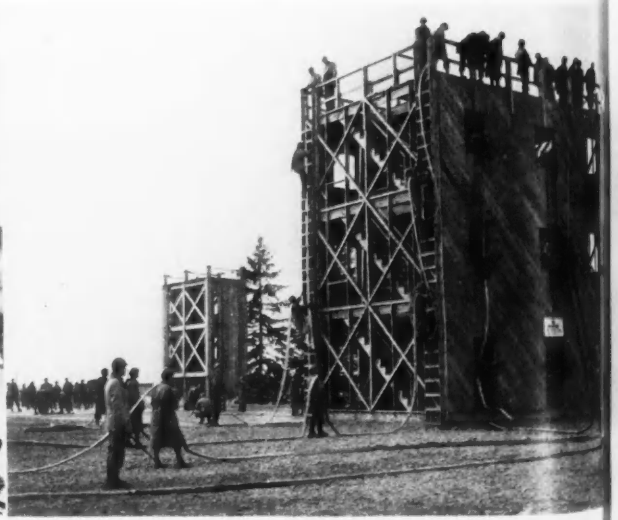
ANNOUNCER: How many fire fighting units were in on that incident?

MILLS: There were two Army units, plus a Navy unit, using pumper trailers to pump water from the bay.

ANNOUNCER: Sergeant, as an instructor what would you say is the most difficult phase of the fire fighting course here at Fort Lewis?

MILLS: I'd say getting the men rid of their fear of fire. This natural fear is overcome by demonstrations. As soon as the men gain confidence in their equipment and learn to work with each other, there's nothing to it. We graduate 200 men in each class every 6 weeks, and when those

*War Department Bureau of Public Relations*



# ...aded in World-Wide Broadcast

men leave they really know how to fight fires, and what's just as important *prevent them!*

ANNOUNCER: Sergeant Mills, you mention *prevent* them. Of course fire can't be prevented if it's caused by enemy action.

MILLS: No, but if you're ready for it, it *can't* cause as much damage, and it *can* be controlled. But that's not my department. That's Tech. Sergeant Henry Furlong's job. Why don't you put him on the other end of the questions for a while?

ANNOUNCER: A good idea, Sergeant. Here's Technical Sergeant Henry Furlong of Philadelphia. Sergeant, what are the main problems in fire prevention as you see them?

FURLONG: On military installations I think they are basic housekeeping, proper disposal of trash and rubbish, and general neatness. Everyone cooperates here at Fort Lewis a hundred per cent though. Through careful fire prevention, fire damage at Fort Lewis has amounted to only ten dollars approximately in the last eighteen months.

ANNOUNCER: Thanks, Sergeant. And now a fire fighting platoon in training is ready to go into action and demonstrate a classroom problem. For the purpose of training there is a simulated supply dump in the training area near our microphone. We shall assume the dump is set on fire by enemy action, and then the fire fighting platoon will go into action and battle the flames. An instructor will set off a charge of dynamite which will start the fire and send the platoon into action. Here we go!

(Explosion of dynamite.)

ANNOUNCER: Fire apparatus is immediately dispatched.

VOICE (On public address system): This is fire control. Trucks one-two-three-four go to area X, supply dump on fire.

(Trucks take off, sirens screaming.)

ANNOUNCER: The trucks are speeding to the area. They stop. Pump trailers and hose are being hauled out by the men. And now let's switch up to where the fire fighters are advancing toward the flames.

(Sounds of pumps, spray, flames, shouts.)

FIREMAN: Operating hoses with nozzles on them that shoot fog are carried by the men moving in on the fire from four sides around me. Rescue men are covered by a curtain of water. These rescue men are dressed in asbestos suits. Two rescue men are going into the flames to rescue a dummy. The fire fighters operate like a team, using a V or wedge formation to get the rescuers through. To put it another way, on the flanks the fire fighters use fog and foam to protect the men in the asbestos suits to push the fire back. The flames are subsiding, as the rescuers take out the dummy. The rest of the men break out of the V formation and disperse around this simulated fire area, now pouring a heavy stream of water on the supply dump. The fire is now entirely put out, and from the time the trucks reached the point of fire until this moment, only seconds have elapsed.

ANNOUNCER: And that's a burning example of how our fire fighters operate all over the world. To conclude, here is the first Commandant of the fire fighting schools, Major David F. Glines of Los Angeles. (*Major Glines was formerly head of the California Firemen's Training Program.*—Ed.)

MAJOR: It was in response to an urgent appeal by Gen. Dwight D. Eisenhower that the fire fighting school was first activated. Today its graduates are doing a tough job with supreme confidence and efficiency in every war theatre on the globe. The Nazis started it with fire in the early days of the war and we are paying them back with fire now. More than this, we are going forward to victory in Berlin with the most highly trained fire fighters and best equipment in the world.

ANNOUNCER: Thank you, Major Glines. Our thanks also to Major Gen. Joseph D. Patch, Commanding the Army Service Forces Training Center here at Fort Lewis, Washington, and to Col. Frank S. Besson, Commander of the Engineers. From the great Northwest, the "Army Hour" returns you to New York.

*War Department Bureau of Public Relations*

## British Army Has Amphibious Fire Service

THE recent all-army landing operation on the south bank of the river Scheldt isa reminder that Britain's land forces are not entirely dependent on the Royal Navy and the Merchant Navy for amphibious operations. The War Department has a large fleet of fast launches and petrol barges, tugs, and lighters while the British Army Fire Service not only operates ashore and afloat but is responsible for providing fire cover overseas for all the Services.

Three types of craft were selected for conversion into fire boats for the Army Fire Service. Motor fishing vessels, 61½ feet in length, with accommodations for a crew of nine, were chosen for patrolling the beaches and outer anchorages. Broad in the beam and thoroughly seaworthy, these boats are capable of staying at sea for days at a time and of fighting fires without shore assistance in all weathers. They carry two heavy fire pumps with a capacity of 1,800 G.P.M. and full equipment, including a portable pump for shipping aboard damaged craft during salvage operations.

A number of 45-foot motor fishing vessels were adapted for covering large ports and harbors. They also are robust and seaworthy and carry two large pumps, but they have no accommodation for crew and are therefore shore-based while capable of attending fires at sea

To meet the problem of maneuvering in narrow, sometimes shallow, waters of ports, canals and rivers, small landing craft were equipped with one heavy pump and allotted to shore stations as "water fire engines."

During the conversion everything possible was done to enable the crews to get

(*Continued on page 18*)

# U.S. Capitol Building Fires

*International*

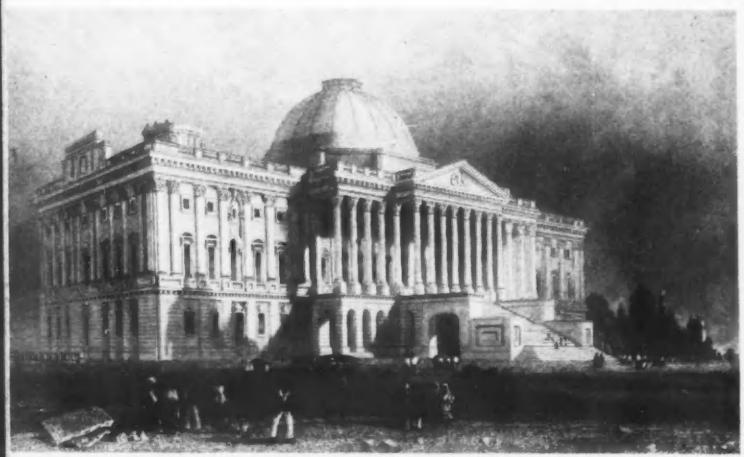
ONE of the great buildings in the world, whose history dates back to the day George Washington laid the cornerstone, has been visited by fire many times in its 152-year-old history. The three most notable fires in this structure are described on these pages. It is interesting to know that on more than one occasion, the building was saved by volunteer firemen long before the paid fire department was organized in the District of Columbia.

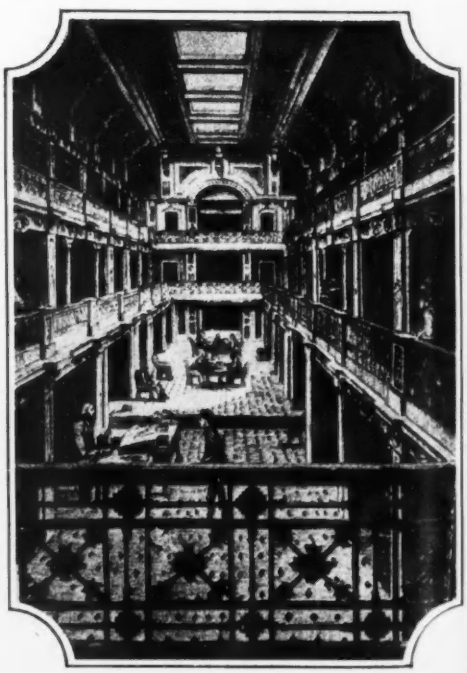
**1814** It was on August 24th, after the defeat of the American forces at the battle of Bladensburg (War of 1812) that the Capitol was first visited by fire. "Chronicles of America," published by The Yale University Press, reports: "The march had been orderly, with a proper regard for the peaceful inhabitants, but now Ross and Cockburn (British commanders—Ed.) carried out their orders to plunder and burn. At the head of the troops they rode to the Capitol, fired a volley through the windows, and set fire to the building." Another account relates: "After three or four British volleys at the Capitol, the two detached wings were set on fire. The massive walls defied the flames, but all the interior was destroyed, with many valuable papers and the Library of Congress." The Library at that time consisted of a modest collection of some 1,000 volumes. It had been housed in a wooden passageway where the rotunda is now located. When the Capitol was burned by order of Admiral Cockburn, these books were used as kindling for the north wing.

**Right: The main reading room of the old Library of Congress.**

**Below: An early print of the Capitol, before the present dome and north and south wings had been built. It contained the Library of Congress.**

*The Bettmann Archive*





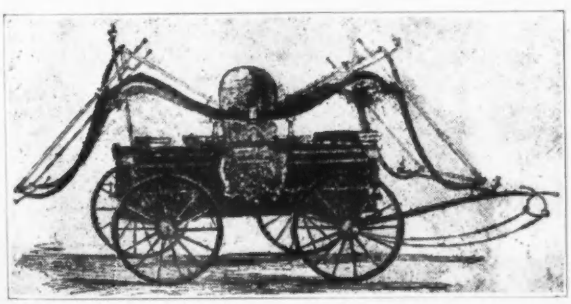
**1851** The night of December 24th, in the year 1851, was bitter cold. The volunteer firemen of Washington had just finished battling a big hotel fire when news reached them that the Capitol was on fire. They at once started for the scene of the new conflict, and found upon their arrival that the fire had started in the Library of Congress, at that time housed in the central wing of the Capitol. The fire was discovered by the great statesman Edward Everett, who was browsing in the library. Included in the library were 6,700 volumes from the private library of Thomas Jefferson, purchased by the government after the destruction of the Capitol in 1814. The Library had also suffered from fire on December 22, 1825.

The fire of 1851 had gained great headway by the time the alarm was given and the firemen arrived. The flames were so fierce and the smoke so dense that the members who rushed in were unable to save anything except four or five portraits of the Presidents and the original Declaration of Independence, now on display in the present Library of Congress. The Library contained 60,000 volumes, more than half of which, together with works of art and cases of historical items, was destroyed.

According to the Firemen's Record, The Anacostia volunteer fire company which had not been in service at the hotel fire, attempted to get their suction engine into the Capitol rotunda (as it was necessary for the water to be forced from hand engine to hand engine) but it was too large to pass through the door. The Columbia fire company (now Engine Co. 3, D.C.F.D.) was more fortunate, and soon the rotunda echoed with the working of the brakes. Hose was run to the roof and water poured in torrents on to the floors below. A portion of the roof fell in shortly after the firemen had taken position on it but fortunately no one was hurt. President Fillmore and members of his Cabinet were on the ground and rendered valuable aid, getting the employees of the Capitol to help the firemen. A Mr. Baxter, who saved the Declaration of Independence, as well as the firemen, were thanked by the President.

*International*

**Five alarm fire: January 3, 1930**



★

**Here is the old hand engine of the Columbia Engine Company, which saved the Capitol in 1851 because it was small enough to get through the doors.**

★

**The Declaration of Independence, under Marine Guard, now may be viewed in the Library of Congress only because of the quick work of a volunteer fireman in 1851.**

*International*

**1930** About 6:45 P.M. on January 3d, a policeman saw fire coming from the roof of the Capitol. He notified a guard inside and they went to the top floor with hand extinguishers, finding the fire in an artists' studio located in the storage room, where valuable documents were stored on wooden shelves. The fire was too advanced for hand extinguishers so one of the guards returned to the main floor and pulled a fire alarm box at 6:57 P.M. Firemen experienced difficulty in entering the building because all doors were locked. Hose lines were taken to the roof over aerial ladders and streams were played on the fire through skylights. Other lines were snaked up an inside spiral iron stairway. Due to the difficulties encountered in reaching the fire, five alarms were sounded but once the fire was reached it was controlled by five hose streams. Fortunately no irreplaceable documents were destroyed, although a number of objects of art were lost.

# Fighting Airplane Crash Fires

**Extracted from an address by Fire Marshal George W. Clough, Nassau County, New York, given before the New London County Fire Chiefs' Association, Mystic, Connecticut. Fire Marshal Clough is a member of the N.F.P.A. Committee on Aircraft Fire Fighting, bringing to the committee his experience at aircraft fires as a volunteer fire chief and later as fire marshal of Nassau County. He is proud of the fact that three of his five sons are in aviation: Paul is a captain for American Air Lines; Warren is a Staff Sergeant of the Army Air Forces Air Transport Command; and Donald is a Second Lieutenant, U.S.M.C.R., assigned to an air base fire department.**

THE subject of fighting fires in aircraft has so many ramifications that it is almost impossible to make any unqualified statement, except that the first consideration of the fire service must always be saving the lives of the personnel involved. This is a principle to which the armed forces heartily subscribe.

Authentic information on every phase of the question of airplane crash fire fighting is now in course of preparation by the N.F.P.A. Committee on Aircraft Fire Fighting, a group of men closely allied with flying and fire fighting. It will not be long before it is available but to give you some idea of the extent of the subject, the new manual will comprise a book of almost 100 pages.

I claim no special qualifications for talking about airplane crash fire fighting except that Nassau County, New York State, has been known as an aviation center since the early days of heavier-than-air flying. Its volunteer firemen have been called upon to handle just about every type of an accident or incident that could happen to a plane. I have also been fortunate enough to attend every meeting of the N.F.P.A. Committee working on the Airplane Crash Fire Fighting Manual.

It seems to me that the problem is universal. There is scarcely a community, urban, suburban, or rural, which does not see planes in the sky daily. With the extensive operations of the armed forces today and the promise for the future that every city will have its landing strip, if not an airport, 6,000 of which already exist, or are planned, there would hardly seem to be an acre of land in the United States which may reasonably feel secure against a crash, an air accident, or a forced landing. If such a situation developes, what can and should be done is materially affected by local conditions, equipment available, the type of plane, and the extent of involvement in fire, if any.

Records indicate that 70 per cent of the airplane accidents which may be classed as crashes involve fire. Some 77 per cent of the persons injured suffer burns of which 90 per cent are fatal. It has not been possible to determine the exact percentage where burns were the probable cause of death. The majority of the crashes occur far enough away from airports or bases to become the problem and responsibility of the civilian fire forces.

Some years ago the basic airplane fire hazards were gasoline and doped fabric, and the sources of ignition were switches left on and gasoline in contact with hot motors. But many new hazards have come with the increased size and higher altitude types of planes. Changed construction, includes the use of metal and the introduction of heating, hydraulic, oxygen, anti-icing systems and, in the case of war planes, armament, detonators, bombs, and pyrotechnics.

Whatever may be the type of plane or its trouble, the first essential requirement for fire service operation is a dependable arrangement for reporting the occurrance to the proper authorities. Manifestly, the protective services concerned cannot be actuated until they are aware of the incident. No general prescription can be offered here because the proper procedure is wholly dependent upon local facilities. Each community should make its first order of business the establishment of the best notification system which is practicable and will result in the prompt "filtering" of the alarm. Several methods will be discussed in the new N.F.P.A. manual.

It is desirable that the public should know whom to call and the best means of communication available. The party or official receiving the first call must know whom he is to call in turn, in the order of importance, always bearing in mind that there are lives to be saved. High on the list should be the agency directly responsible for the plane as soon as its classification can be determined. The agency operating the plane will doubtless possess information that will be essential to rescue operations. Those nearest to the scene should be called before others.

PLANS may also be made in advance as to just what apparatus and equipment will be required and where it will be obtained so that response will be automatic and will not require special consideration or decision after the alarm has been received. The application of a grid system to the map of your county will aid in determining the communities from which the quickest response can be made to each section.

Where airports are located nearby, consideration should be given to what is called the "traffic pattern." Planes arrive and depart regularly over certain areas in their approach to and from runways. Because of the frequency of use and because at these locations the ships are at lower altitudes, a greater frequency of accidents must be expected at these locations.

When an alarm for a crashed plane is received it must be assumed either that there is a fire or that one is likely to occur. It should also be assumed that it will be primarily, a gasoline fire. With prompt action there may be a very good opportunity to save life.

While there is ordinarily no pressure in fuel tanks or lines in airplanes, it is known that fuel tank vents are not always adequate to prevent rupture in case of fire. These vents are usually at the wing tips.

**Soldier fire fighters are battling the fire caused when a P-38 Lightning Fighter Bomber skidded into a gasoline truck. Foam streams are being used by the fire fighters.**

*International*

Response of the fire department should be made with the most suitable equipment. All available Class B extinguishing agents will doubtless be needed to extinguish flammable liquid fires. All such equipment should be rolled at once along with available fog and water spray equipment.

Where water will be available, pumpers and plenty of hose are indicated. Where it is known that water is not available, booster equipment and tank trucks carrying their own water should be dispatched. Ambulances and doctors should respond promptly and at night lighting equipment is essential. However, do not send useless apparatus which will only serve to strip the community of protection and add confusion to the scene.

On arrival, as at all fires, a quick size-up of the situation should be made to determine the type of plane involved, the probable number of occupants, extent of crash damage, extent and location of fire, if any, direction of wind, exposures, and in the case of military planes, the probable armament and bomb load. It must be assumed that planes of the armed services mount guns and carry bombs and pyrotechnics.

Army pilots have orders to release bombs, flares and bomb-bay gasoline tanks when a crash is expected.

The Army tells us that it is not safe to approach a burning plane with a bomb load nearer than 3,000 feet. But what fireman is going to stay more than half a mile away from a fire? What if the crash is in the middle of Main Street? Are we to evacuate an area a mile in diameter and let it burn? There may be valuable exposures and many lives endangered unless the fire is controlled. What fireman is looking for a safe place? If he was, he would not be a fireman.

But we can take precautions. There is no gain in driving apparatus or even walking into the muzzles of machine guns or cannon which are electrically fired and may go into action when the insulation is burned off the wiring. There is no use in allowing more men than necessary to approach so close as to endanger their lives, just to look on. There may be HE (high explosive) bombs heating up to the point of detonation. Allow no more men than can be actually useful, and no spectators, to remain in an exposed position.

Do not assume that occupants of the plane are beyond help until you have made sure of that fact. Do not injure occupants further by careless or unessential movement. There is no one accepted technique for rescues. You may have fire to enter, seat straps and parachute harness to cut. Human beings with various degrees of injury may be trapped by the crash.

It is agreed that a protective cover of carbon dioxide, fog streams, or solid streams of water frequently are necessary to approach a blazing plane even if the rescue crew is wearing protective clothing. With the protection of such extinguishing and cooling agents, a fireman's bunker suit will do just as well as the more cumbersome asbestos suit and may be more suitable.

**A four-motored Army bomber on a test flight suddenly caught fire in one wing and began to lose altitude over the city of Seattle, Washington. It crashed into this meat packing plant and killed 14 people.**

*Acme*

Possibly excepting armament involved in military crashes, the most serious problem will be the gasoline which all planes carry in considerable quantities. Some of the larger models carry over 8,000 gallons, so while every fire department has had experience with gasoline, they may not have had such large quantities to deal with except in the cases of gasoline tank trucks and trailers or railroad tank cars such as the New Haven firemen faced as reported in the last issue of VOLUNTEER FIREMEN. However, do not let the octane rating bother you. Gasoline is just gasoline as far as firemen are concerned.

Other than armament, bombs, gasoline, and possibly some oil there is nothing mysterious about fighting airplane crash fires. The fast burning doped fabric, if present, responds to the water cure if water can be applied before the fabric is consumed.

Approach to the plane should be from the windward and the object is to prevent the fire from reaching the cockpit, pilot's compartment or other sections which may be occupied, or to drive the fire away from such locations if already involved. If the crash results from a spin or a dive, the prospect of saving life is very slim. The chances are that there will be very little of the plane in one place. You will just have a mass of burning debris to wash out and possibly exposures to protect.

If the plane is intact and involved in fire you will have to try to save life. It would be very fortunate to have the three tons of carbon dioxide carried on some airport fire trucks, but as such specialized fire trucks are still few and far between, you will have to attempt to clear an entry for rescue operations by driving the fire back with solid streams and fog nozzles.

A minor fire can probably be extinguished, but no matter how quickly you believe that it can be done, do not delay rescue operations as the occupants may be unconscious and the fire may get out of control at some inaccessible location.

The usual causes of airplane crash fires are:

Failure to cut the switch prior to crash, metalic spark from impact, broken or shorted wiring, overturned battery, gasoline ignited by exhaust or hot engine, leak in oxygen line, movement or settlement of wreckage, static spark.

Where there is no fire, the rescue should still be the first order of business. Meanwhile have hose lines ready because fires have been known to start as much as 25 minutes after a crash. For this reason firemen must never assume that they will arrive at the scene too late to be of assistance.

With planes upside down and with doors and escape hatches covered, demolished or out of shape, rescue is sometimes a complicated business.

(*Continued on page 18*)

# RUBBER or CANVAS
# COMBINATION SUIT
## NOW AVAILABLE!

Special combination suit with Bunker Pants is Midwestern's Outfit No. 101. Detachable wool linings. Flexible elastic inner sleeve for wrist. Keeps out water, cold and sparks. Equipped with Midwestern Safety Snap, a new exclusive feature. Can be easily and quickly fastened or unfastened — nothing can catch on it. Will not freeze or jam as easily as old stype snap. Midwestern garments are favored by the larger municipal departments throughout the country. Write for literature and prices.

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# MIDWESTERN MFG. CO.
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# A LESSON in VENTILATION

**Reported by Chief Abel S. Eldridge**
**Newport, Rhode Island**

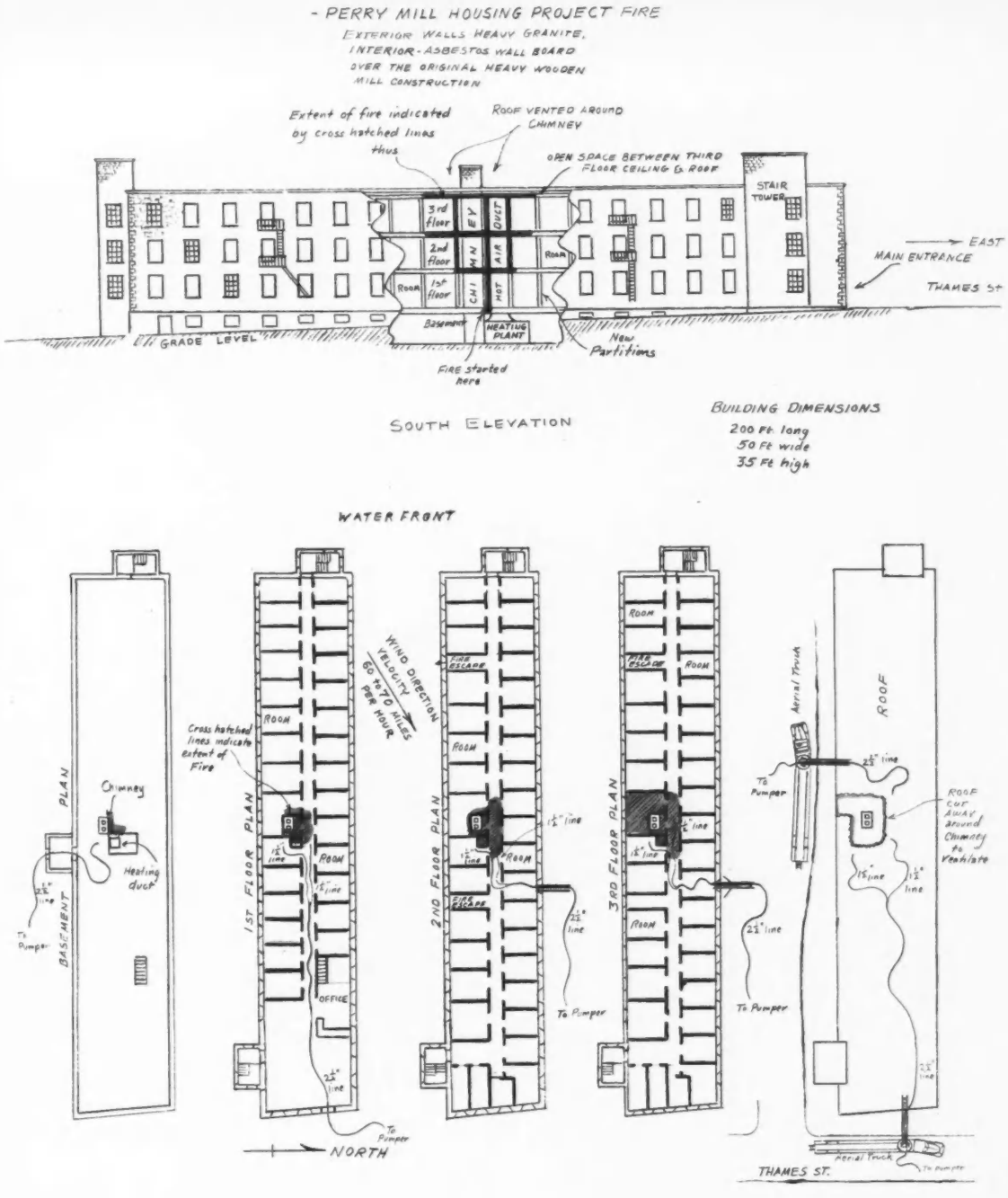
ONE of the finest examples of effective ventilation, co-ordinated with the correct placing of hose streams, was a fire at Newport, Rhode Island, involving a large Government dormitory for war workers. This fire, reported to the N.F.P.A. Department of Fire Record by Chief Abel S. Eldridge of the Newport Fire Department, was of such interest that we asked him to send us the diagram of fire fighting operations shown on the next page. These are so instructive and show such excellent technique that we recommend their use in classes on ventilation because effective ventilation must always be co-ordinated with proper placing of hose streams.

To make the fire fighting job really tough, a sixty to seventy mile gale was lashing the water front on which this large structure is located. The fire was in the Perry Mill War Workers Dormitory, a three story, stone walled structure having joist and timber floors, and tar and gravel surfaced roof. The building had a stair tower at either end, and in addition there were two outside balcony-type escapes.

The building was a dormitory for war workers and Navy Waves. The fire was discovered at 2:30 on a weekday afternoon by a woman cleaning a linen closet on the first floor. It had started in the basement around a heating duct, which, though asbestos covered, had no insulating air space so that the wooden duct charred and eventually ignited. The alarm was telephoned to the fire department and a box alarm was struck. The building was provided with unusually good private protection and a wet pipe sprinkler system. However, the sprinkler system was not a factor in this fire because the blaze was entirely confined to concealed spaces, including partitions and roof space. Three small standpipe streams supplied by low pressure water works were used, however.

When the fire department arrived, they found that the fire which had started in the basement had mushroomed up around the chimney to the roof. There were no fire stops in these partitions. Thus the fire extended upward throughout the center of the building, of combustible construction, and threatened to spread rapidly in either direction throughout the concealed spaces, although the strong winds would have tended to drive the fire faster toward the east or shoreward end of the structure had improper ventilation been employed.

The fire department was fortunate to have a good water supply from hydrants five hundred feet apart on a 12-inch main, and in addition, pumpers drafted water from Narragansett Bay. Four engine companies and two ladder companies were called to the fire. With the exception of one 2½-inch pumper line used to control the seat of the fire in the basement, and

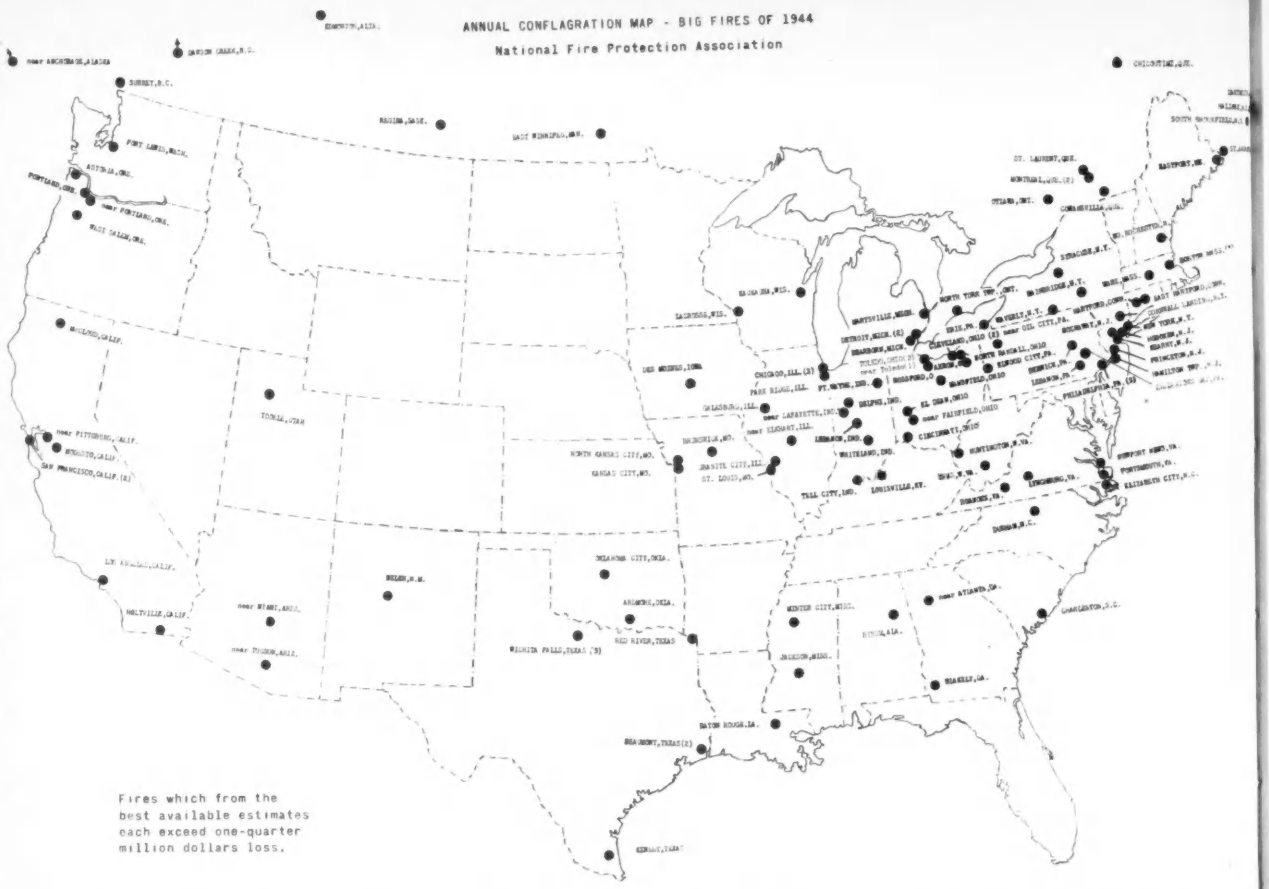



another 2½-inch line direct to the roof where the fire threatened to spread through the roof space, all of the streams employed were 1½-inch lines wyed off 2½-inch supply lines.

It was obvious that the fire would have to be controlled at each floor level and at the roof in order to prevent extension throughout the entire structure, due to the lack of fire stops. As is typical in such cases, the greatest extension and danger was on the upper floors and at the roof space which was open for the entire length of the 200-foot long building.

It will be seen from a study of the fire fighting plans presented here, that there were five levels at which the fire had to be held: basement, first floor, second floor, third floor, and roof. That this was successfully done with four engine and two ladder companies indicates a very creditable piece of fire fighting. To control the fire on the first floor, a 2½-inch line was taken through the front door and down the long corridor to the center of the building where two 1½-inch lines were wyed off to extinguish the fire to this point. At the second floor,, a 2½-inch lines was extended over a ladder and through a window, and two 1½-inch lines were wyed off to intercept the spread of the flames toward the front of the building. To control the fire on the third floor, a 2½-inch line was taken over a long extension ladder having poles and wyed off to control the fire which had involved part of the central corridor. The work of controlling the fire at the roof level was perhaps the most difficult, due chiefly to the extremely high gale, and the firemen had all they could do to stay on

*(Continued on page 18)*


ANNUAL CONFLAGRATION MAP - BIG FIRES OF 1944
National Fire Protection Association
Fires which from the best available estimates each exceed one-quarter million dollars loss.

# BIG FIRES OF 1944

DURING 1944 there occurred in the United States, Canada and Alaska a total of not less than one hundred and twenty-two fires, each of which resulted in a loss of $250,000 or more. This conclusion is based upon unrestricted information received by the N.F.P.A. Department of Fire Record and is not necessarily complete. Sixteen of these fires occurred in Canada and one in Alaska. While a substantial number involved industrial plants engaged in war production, no less than eighteen destroyed property at army and navy establishments. It is often difficult and sometimes virtually impossible to obtain information about fires occurring on army and navy property due to the strict censorship that prevails. Thus it is quite possible that other large loss fires have occurred which have not come to our attention.

The one hundred and twenty-two large loss fires of 1944 represent an increase of sixteen per cent over the number reported for 1943, and an increase of two hundred and twenty per cent during the past five years. As in the past years, an analysis of the reports reveals that the factors most frequently responsible for the large losses are inferior building construction with excessive areas, excessive amounts of combustible stock subject to one fire, and lack of adequate private fire protection.

## WHAT ABOUT A PAGE OF FOREST FIRE FIGHTING NEWS?

CHIEF CHARLES M. LEVERING, La Plata Volunteer Fire Department, Maryland, wrote this letter to the Editor. What do readers of VOLUNTEER FIREMEN think about this idea?

"I have wondered for some time whether you have any compilation of data on woods fires. Most accounts of disastrous fires of this type seem to dwell on the horror and destruction phases. That, of course, is necessary to the public to the need for preventive and protective measures, but what I would like to see are accounts of conditions leading up to the fires — humidity, wind, any local prevention measures that failed, how the alarm was spread, what organized fire fighting was done, with what weapons, also how the fires were finally corralled and extinguished.

"It would be interesting to know what the relation is of rural fire companies in various surrounding states to the woods fire control efforts of the state departments of forests and parks. How much training do such companies receive in this kind of fire fighting and what equipment they maintain for this purpose.

"In Maryland, state laws authorize the Department of Forests and Parks officers to press into service any able-bodied man between the ages of 18 and 50. Does this mean that at any time a forest warden (who may have far less experience than the officers and members of a fire company) can take over direction of the men of that company and can hold as many members of the company as he pleases on mopping up or patrol duty?

"It seems to me that the old professional, big-city angle on fire loss control has, and is, causing the overlooking of a very real fire department prob'em. Every little woods fire necessitates wear and tear on equipment and use of many man hours.

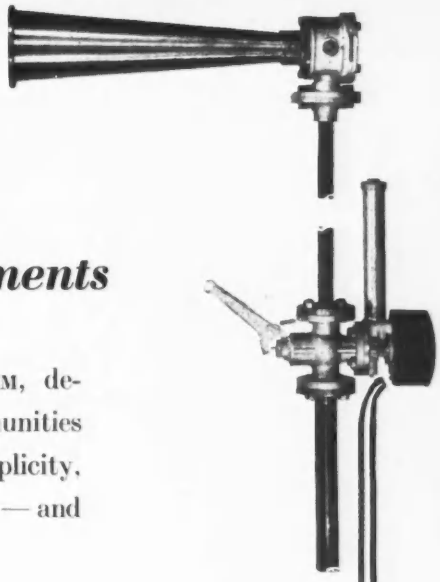
"Of course in areas of vast forest ranges the matter is beyond the scope of regular fire companies, but in my county and, I imagine there are many similar areas on the eastern seaboard where woods are small, relative humidity average is high, telephones are plentiful and with their ability to assemble quickly and reach the scene of a fire while in its incipient stages, the fire company is the logical unit to handle these fires. I have also noted that the average rural fire department has a lot to learn about control of woods fires.

"Since rural fire companies response to field and woods fire alarms accounts for from 30 to 50 per cent of all their fire calls wouldn't it be possible to organize some sort of a pool of information on this subject? I do not mean information on the handling of vast forest fire conflagrations, but on the relatively small but always potentially dangerous type of woods fire that can so easily be handled by fire companies that have the equipment and "know how" to handle them."

*A Complete*

# ALARM SYSTEM

## *For Volunteer Fire Departments*



THE GAMEWELL FIRE ALARM SYSTEM, designed especially for the smaller communities is characterized by its reliability, simplicity, low initial and maintenance costs — and Speed.

THE DIAPHONE HORN provides coded signals *directing your firemen to the scene of fire* — or your own siren or other public alarm may be utilized.

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GAMEWELL CONTROL UNIT
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With Self-Winding Register — Manual Transmitter for Sounding Alarms Received By Telephone — Control Switches — Test Switches and Instruments — Batteries, Rectifiers and Line Terminals Mounted Within the Cabinet.

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- Is easier to use
- Saves drying time
- Reduces hose stretch
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- LIGHTEST WEIGHT—76 OZ.
- POWERFUL—MILE RANGE
- LONGEST BURNING HOURS
- ALL NIGHT WORK LIGHT OR
- 150,000 C.P. SEARCHLIGHT
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WRITE FOR NEW EMERGENCY LIGHTING BULLETIN No. 144.

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"MASTER ★ LIGHT ★ MAKERS"
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CAMBRIDGE 39, MASS.

## A LESSON IN VENTILATION

(*Continued from page 15*)

their feet. Approach to the roof was gained by the use of two aerial ladders. One of these was placed at the street end, and two 1½-inch lines were wyed off a 2½-inch line taken over the ladder. These were advanced against the wind. The other aerial was raised just to the windward of the fire and a direct 2½-inch line was used at this point.

Perhaps the chief reason that the fire was limited to a relatively small area was unusually well co-ordinated ventilation. As lines were ready, ladder men promptly opened the roof around the chimney. This drew the fire directly upward despite the high wind, and stopped its mushrooming under the ceilings. Thus the fire was confined to a flue-like area through the center of the building until partitions could be opened and blaze extinguished on each floor. It could also be observed that the placing of the ladders at this fire is worthy of study and commendation. One of the axioms of effective ventilation observed here was that a roof should not be chopped full of small holes that will prove ineffective in removing heat and smoke, but instead a large adequate opening was made, around the chimney. Such an opening is much more readily repaired than numerous small holes. There is always some danger in making a roof opening that flames will drive the axemen away before the cutting is completed. To avoid this, it is customary to complete as much of the cutting as possible before the actual opening is made by removing the roofing material.

The fire department had some factors in its favor. First, the wall and ceiling finish was of fire retardant material which tended to slow the spread of flames through the joist and studs of the floors and partitions. Secondly, the fire occurred at a time of day when the fire department could devote its entire efforts to fire fighting. Had this same fire occurred at night when the one hundred dormitory rooms were occupied, there most certainly would have been delays occasioned by rescue efforts and making certain that all occupants had escaped. Even with the relatively adequate exits, no fire department can assume that a dormitory building has been completely evacuated without making an investigation, particularly at a night fire. However, the basic strategy employed by Chief Eldridge and his department would have proven effective even had the blaze extended further than it did in this case. In other words, his department was in a position to conquer a more serious blaze than that which actually developed.

Exact loss, while not large, has not been announced as the property was government owned. After the fire, the fire department pumped out water driven into the basement by an extremely high tide which took place during the storm that occurred simultaneously with the fire.

●

## Fighting Airplane Crash Fires

(*Continued from page 13*)

Whenever there is a ground spill of gasoline, whether there is fire or not, be sure to insulate it against ignition by using a blanket of foam. It is never safe to leave what may be half a million dollars worth of property, to say nothing of the occupants and firemen, in a pool of gasoline which may flash into flame even from settlement of the wreckage.

The N.F.P.A. Committee which has been working on the manual for airplane crash fire fighting is composed of representatives of the Army, Navy, Civil Aeronautics Agency, airlines, airplane insurance interests, Fire Chiefs, and the fire service. The committee has secured the release of restricted Army information prepared by the Corps of Engineers, and readily adaptable to the needs of the fire service through the new manual. When this manual becomes available within the next few weeks it will provide pictures and diagrams showing the locations of fuel and oil tanks, pipe lines, oxygen lines, access and escape openings, and construction details of typical planes. It is the belief of the committee that no extensive additions to normal fire department equipment is necessary to permit the average fire company to render assistance at airplane crash fires. It is recommended that fog nozzles and applicators be carried for this service. Increased booster tank capacity would be valuable for use at crash fires located beyond water distribution mains. It is believed that fog is superior to solid streams in many cases of crash fires, especially where water supplies are limited. Ordinary fire department fog equipment should prove of considerable value.

●

## British Army has Amphibious Fire Service

(*Continued from page 9*)

into action quickly with the most suitable and efficient equipment procurable. All the experience gained in fighting fires in the Mediterranean and elsewhere was used to make these fire boats worthy of the tasks they would have to perform. The pump suctions were carried down through the bilges. The deliveries were brought out to valves on each side of the deck. Racks, bollars, clips, and cupboards were provided for the large quantities of fire hose and small equipment. Large foam tanks holding 200 gallons of compound were built into the boats, and the compound was fed direct to the pumps through multiple jet inductor heads mounted by the pumps.

A monitor on the foredeck, capable of delivering large quantities of water or foam was installed for deluging or smothering large fires, and the equipment included self-contained breathing apparatus for use in smoke and fumes, oxyacetylene cutting equipment and rocket line apparatus.

The British Army Fire Service fire boats are operated by coxswains and engineers of the Royal Army Service Corps while the Army Fire Service crew fight the fires. That is the theory, but in practice they work as a team of "sea-firemen," taking their turns with all duties and a family pride in the condition and capabilities of their craft.

The failure of the Luftwaffe to attack Allied shipping off the Normandy beaches did not deprive the fire boat crews of opportunities for using their equipment. Mines and underwater obstacles gave the fire boats plenty to do, for when they were not fighting ship fires they took on salvage work, and many a man left struggling in the rough seas through his landing craft foundering, lived to fight on in Normandy because an Army Fire Service fire boat was on hand to pull him aboard.

The fire boats have relayed water ashore through hose lines and inland through steel pipes laid by the engineers to enable the land-based fire brigades to fight their fires, and as each port has been liberated one or more fire boats has moved in and taken station under the local Army Fire Service fire control organization.

Britain's Army Fire Service is proud of its responsibilities afloat and of the craft allotted to it. It took a special pride when soon after D-Day, one of the fire boats was cited in Naval orders for saving a blazing coaster.

*Courtesy British Information Services*

●

## FOR YOUR INFORMATION

UNIT VII of the Fire Service Training texts, published by the Oklahoma A. & M. College, Stillwater, Oklahoma, has recently been issued, and covers the subject of ventilation practices. This training text was compiled by the Department of Trade and Industrial Education in cooperation with the fire department instructors of Oklahoma and cooperating states. The text was edited by W. Fred Heisler of Oklahoma A. & M. College.

It is a 34-page manual, containing chapters on the following subjects: Ventilation Practices, Meaning of Ventilation, Situations Requiring Ventilation, Expectancy, Indications of Existing Conditions, Requirements, Sizing up the Situation, Providing Rescue, Providing Fire Protection, Ventilating the Building, Fire Extinguishment, Precautions in Ventilating, Other Uses for Ventilation, Questions and Problems.

Copies are available at 30 cents each from the College Book Store, Stillwater.


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# THE HIGHER THE DIZZIER?

## How One Fire Officer Overcame Fear of Height

**This article by Mr. Eric T. Grayson, appeared in the November, 1944 issue of *Fire*, the Official Journal of the British Fire Service, under the title of "Vertigo above Ground Level: Causes and Cure." *Fire* holds the opinion that "the average man should not be used for serious ladder work after he has reached the age of 47 years. The prevalence of vertigo (dizziness) among some fire fighters is similar to the prevalence of *mal de mer* among sea-farers."**

***Fire* does not explain how the figure of 47 years was arrived at. All persons do not age with equal rapidity. Probably the chief factor is loss of the ability of the eyes to accommodate themselves and change focus suddenly. This usually takes place at about this age.**

FOR many years I was subject to distressing and demoralizing attacks of vertigo when working at comparatively low altitudes. At length, I was driven to the task of analyzing the conditions conducive to vertigo with a view to finding a means of eliminating these contributory causes. I am happy to say that, in due time, I achieved success.

**For the past decade I have been able to work at heights which, an order to reach, given say 11 years ago, would have been regarded by me as an order to commit suicide. It is, therefore, with a sincere desire to help all sufferers from vertigo that I now explain the causes of the trouble and prescribe the remedy.**

Research, at the outset, was far from easy. There did not appear to be any standard work on the subject, at least within the reach of the average layman, and I was forced to try to ascertain from my own reactions to altitudes the cause of a physical condition affecting normally healthy and courageous persons.

I thereon resolved to discover all I could about conditions that cause a man, who has willingly reached an altitude to be suddenly assailed by a terrible feeling of loss of control of his limbs, accompanied by giddiness and a horrible feeling of nausea.

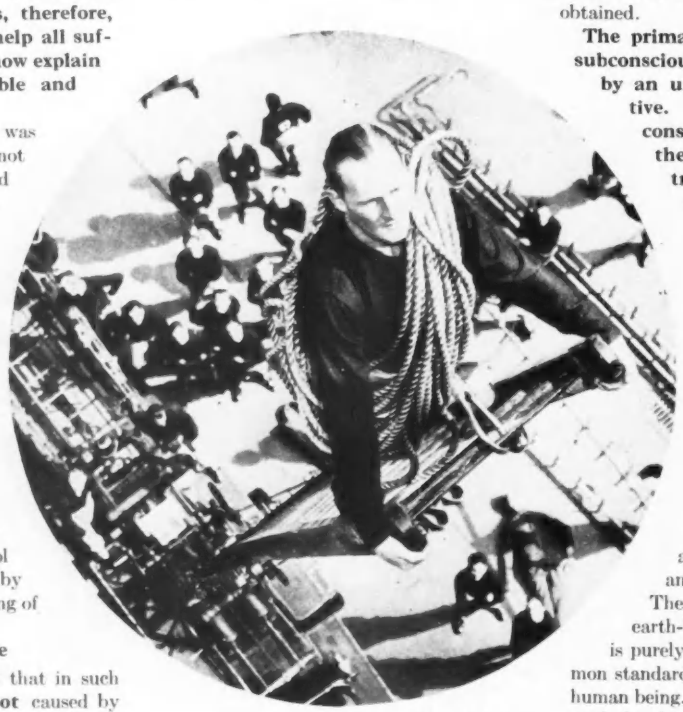
### Not Cowardice

I came to the conclusion that in such circumstances vertigo is **not** caused by cowardice, and that, therefore, the sufferer should on no account be chided, or ragged, by onlookers fortunate enough to be immune from vertigo.

Instructors of Fire Service drill squads should therefore strongly discountenance any tendency, of their own, or others, to chide a sufferer or to deride him.

To do so is equally as absurd, and as harmful, as it is to jeer at a person who is afraid to enter water because he cannot swim. This phobia is recognized by responsible teachers of swimming who deal with it in a sympathetic manner. In fact, a technique has been developed whereby, given the willing co-operation of the subject, the phobia can be completely eradicated, and the person taught to swim.

It is dangerous, and downright criminal, to throw such a person into deep water, or to entice him beyond his depth. Tragedy may easily follow. I have used this analogy because early reactions to swimming are familiar to many people and am, myself, a swimmer of some forty years' standing with considerable experience under various conditions, safe and unsafe. What I have just said about swimming can be applied to persons affected by altitude.



*International*

Space will not permit enumeration of the methods I adopted to arrive at the conclusions that follow. All I can say is that, lacking any textbook on the subject, I began to induce vertigo, after having taken steps to prevent a fatal ending. While still under the influence of the vertigo, I analysed my condition, and from this evolved a technique for its cure.

I had no assistance from anyone else; instead my experiments led to my being made the target for a certain amount of good natured banter.

### "Unnatural Perspective"

The result, however, has been that I am now immune from vertigo. Today, I enjoy every opportunity of going aloft and working at heights, mostly on ladders ranging from "household steps" to cat-ladders on chimney-shafts, not forgetting turntable ladders. I never miss an opportunity to go over roofs, or to place myself in any position where valuable practice can be obtained.

**The primary cause of vertigo is a subconscious fear of falling induced by an unnatural visual perspective. Momentarily, the subconscious mind disputes with the conscious mind for control of the limbs and the result is mental, and physical chaos.**

This subconscious fear may arise from a past incident of which the subject has no recollection. It can be removed only after confidence has been restored by development exercises, at gradually increasing heights in varying circumstances.

The most important aspect is that of the different perspective seen when the average person looks down at an object instead of up at it. The average person is normally earth-bound. Judgment of height is purely comparative, and the common standard of comparison is the adult human being. How often do we hear, and read, the phrase "As high as a man"? Or read, as the caption under a photograph "Some idea of the height may be gained by the figures of the men in the foreground"? In this manner, easy comparison on the human mind is effected.

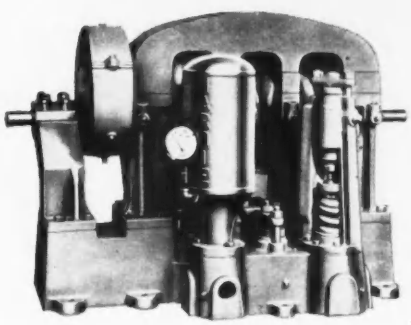
On the horizontal plane one sees one's fellows in vertical section; from an altitude they are seen in plan, and so a new set of comparisons must be built up.

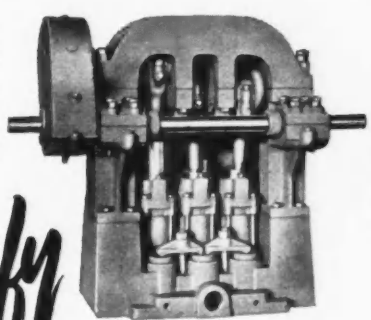
Again a lively imagination can cause trouble. One naturally associates chimney-tops with height, and to find oneself on their level brings sudden realization of the fact.

When one has been working at a height for some time it is surprising how natural adjustment takes place and the distance down appears much less.

Lesson 1: When first going up take no notice of what is happening below you.

(*Continued on page 24*)





● Above is the Hardie LCXA Pump delivering 60 gallons at 130 R. P. M. with nozzle pressure of 800 P. S. I. At right the Hardie XCXX Pump delivering 35 gallons at 118 R. P. M. with nozzle pressure of 800 P. S. I.

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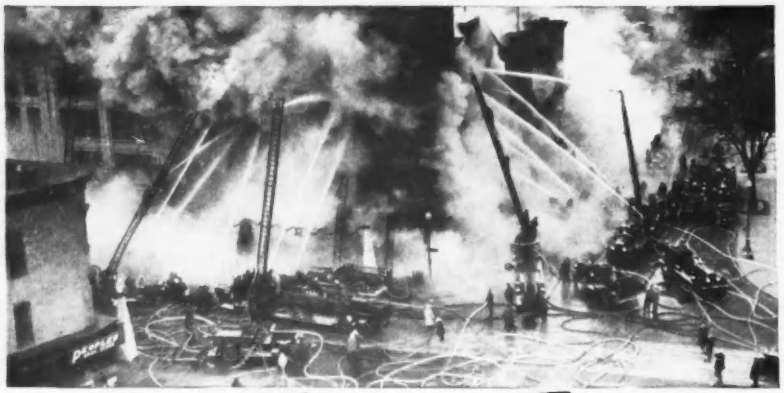

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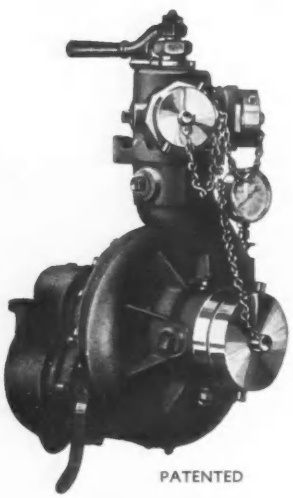

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**From the Base Fire Marshal, Olmsted Field, Middletown Air Technical Service Command, comes this picture of an airplane crash fire fighter's helmet. It is not known who originated this helmet face shield. A similar shield was demonstrated at a Crash Fire Fighting School held at Camp Springs, Md., last July.**

**The transparent shield that protects the face may be swung upward out of the way when there is no need for it.**

**This picture was supplied through the courtesy of Captain George H. Tryon, III. Air Corps; Chief, Facilities Protection Branch; Provost Marshal Section, Wright Field, Dayton, Ohio.**

## Hats Off to Chief Fred Newman of Higginsville, Missouri

ALL firemen are familiar with the sacrifices entailed in protecting their communities against destruction by fire, but few have been faced by the choice forced upon Volunteer Fire Chief Fred Newman of Higginsville, Missouri. One night last December a neighbor reported to Chief Newman that a lumber yard next door to his house was on fire. He telephoned the alarm, calling his volunteer firemen. A very strong wind was blowing the fire directly toward a two-story high business block and a hotel. The available fire equipment was sufficient to provide only three streams, so Chief Newman devoted these streams to the protection of the exposed public properties. By allowing his own house to burn, he was able to save the other exposures.

## George E. Robinson Dead, Noted Designer of Fire Stations

THE Editors of VOLUNTEER FIREMEN announce with regret the death of Mr. George E. Robinson, 56, of Belmont, Massachusetts, on January 17th. Mr. Robinson was a graduate of the Massachusetts Institute of Technology, and a well-known architect who designed many notable fire stations. Last May at the N.F.P.A. Annual Meeting in Philadelphia, Mr. Robinson spoke before the Volunteer Firemen's Forum and a reprint of his speech appeared in the October, 1944, VOLUNTEER FIREMEN.

## Chief Barry of Utica, N.Y. Praises 1½-Inch Fire Hose

CHIEF W. LEWIS ARMSTRONG of Old Forge, New York, former state fire instructor and proprietor of "Army's Fire Service" selling fire department supplies, gets out a mighty interesting little bulletin with fire service news. The following letter in the January, 1945, issue quotes Chief Leo R. Barry of the Utica Fire Department, regarding the use of 1½-inch hose in that city of over 100,000 population.

"I have your letter of November 11th, asking an opinion on the efficiency of 1½-inch hose. As we are sold on this equipment it is a pleasure to oblige and give you the Utica view of the latest improvement in fire fighting.

"Due to the handicaps imposed by the shortage of men the Utica Fire Department experimented for several months during the summer with 1½-inch hose.

"During this time our men tried out the lighter lines and found them to be most practical not only because of their weight but because they gave sufficient volume of water with a consequent lessening of water damage.

"For maneuverability the 1½-inch line has a big advantage over the 2½-inch or 3-inch line and when there are only a few men available to move the lines about, the efficiency of the fighters is increased, rather than retarded. The experiment was conclusive evidence that this new method offers a satisfactory solution to the toughest problem of war-crippled fire departments — manpower shortage.

"Our reaction to the experiment has been to place an order for sufficient 1½-inch hose to equip all engine companies so that every company can share in the advantages that the experiment group had.

"The method of using 1½-inch hose that we have adopted is to stretch in with 2½-inch hose from the hydrant or pump to the fire and to attach two 1½-inch lines through a gated wye with 150 feet of 1½-inch hose on each for working lines. Should we find it necessary to have heavier water lines it would require only a change of hose from the fire in and elimination of the 2½ x 1½ x 1½ gated wye.

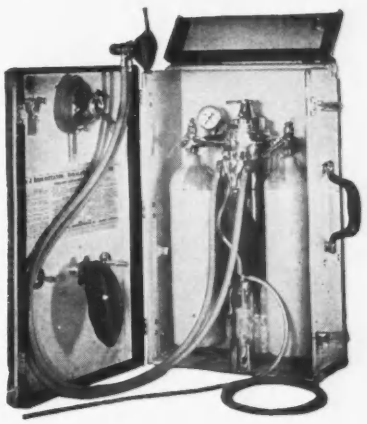
"We are very well satisfied with the efficiency of 1½-inch hose when used intelligently and believe that it will furnish sufficient water for the extinguishment of all ordinary fires. The method has proved its worth to us and we confidently recommend it to all department heads who wish to give their men a 'break.'"

●

ACCORDING to "Pyro," in *The Chief*, the busiest company in New York City last year was Truck 26. 1,696 runs and 869 working fires kept them on the jump. This made 384 more runs and 263 more working fires than in the previous year.


# AN OUTSTANDING RECORD OF LIVES SAVED

## THE E & J Resuscitator Inhalator and Aspirator



**The effectiveness of the E & J Resuscitator in treating desperate cases of Asphyxia speaks for itself in an unsurpassed clinical record. In cases where breathing has stopped it has proven to be a practical, safe and extremely effective instrument for administering artificial respiration without bodily pressure. Internal injuries, severe burns or fractured ribs are no impediment to efficient and successful artificial respiration when this modern scientific instrument is available.**

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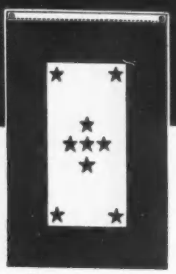
# HONOR YOUR SERVICE MEN



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**Fyr-Fyter equipment has proven its value in preventing small fires from becoming disastrous through the loss of life and property. Recent catastrophic fires with terrific loss of life emphasize the urgent need of fire protection. A Fyr-Fyter Instant will usually check most any fire if used immediately.**

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**Get Fyr-Fyters for safety's sake. We advise and serve war production plants, public institutions, etc., immediately. Write us today regarding Fyr-Fyter equipment for your own protection.**

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ARMY NAVY WAR BONDS

**Fyr-Fyter**


## The Higher the Dizzier

*(Continued from page 20)*

Lesson 2: Acquire confidence in whatever appliance you are using. Reason with yourself that the ladder is made to take a strain far in excess of what you, using it correctly, can bring to bear on it.

Lesson 3: For exercise purposes, satisfy yourself before ascending that the ladder is well and correctly placed. If it is against an insecure surface get someone to ascend and lash it for you. The ladder will sway as you ascend; do not assume a tense posture and upset the rhythm of the ladder. Sway with it, and time your movements and steps to coincide with the sway. The only fairly rigid thing should be your grip of a round.

**(On no account practice by holding the sides, or strings, as do builders, and others, whose job calls for constant ladder work. Their method is correct for their job, where they have time to place a ladder as they want it, and to secure it. In running up a service ladder, cluttered up as it often is by extension ropes, or hose, it is easy to miss one's footing and a firm grip of a round will support one's weight without throwing the ladder out of balance. Even if one could grip the string, or side, sufficiently to hold one's weight one would probably find oneself overboard and the ladder turning over on one.)**

Lesson 4: Never be foolhardy. Have the moral courage to come down, or to stop, when you feel a serious lessening of confidence, or a swimming of your head. Stay at a height as long as you can to become accustomed to that height, and if possible find something to do. Clean the ladder, the windows, do painting, or clean gutters.

For a bad case, and mine was one, use a strong belt to which is attached by a strong piece of cord a deep hook that can be put over a round when the required height has been reached.

Once you have become accustomed to the movements of the ladder, and have acquired confidence so that you can move about freely you may dispense with this hook, but do not be in too great a hurry. In this way confidence will be strengthened.

Should you, however, be suddenly assailed by vertigo, grip a round as hard as you can until it hurts. Then proceed to relax and bring your legs under control, meanwhile retaining your grip of the round. As you succeed do not become over confident in different circumstances, such as running about on roofs. Become "acclimatized" first; take sensible precautions until you are; and take note of the following predisposing causes, and allow for them:

**Excessive heat, causing faintness; excessive cold, causing shivering and stiff muscles; fatigue; illness, or its after-effects; liverishness; after-effects of too much alcohol; use of muscles not normally given much exercise and brought into hard use when climbing ladders, or walking on sloping roofs causing tremors and possibly cramp; and poor eyesight, or temporary impairment, as caused by liverishness or migraine.**

If you are a sufferer, and if you put these few hints into practice you will be pleasantly surprised at your capability to undertake work at various altitudes. The moral effect to a man who, knowing his weakness and suspecting a secret grain of cowardice, has been despising himself, the resultant increase of self-confidence is like a tonic.

All this entails a certain amount of moral courage in not worrying about looking foolish; so does learning to ride a bicycle.

Final Advice: Take every opportunity to obtain practice; and watch those predisposing causes. From childhood I suffered from this phobia, until, as already stated, I cured myself ten years ago. I am now 46, I wear glasses, smoke heavily, take an average amount of alcoholic stimulants but am free from vertigo merely because I put into practice the advice that I have now given to all my readers.

●

## What Would You Tell Our Allies about the American Fireman?

*(Continued from page 6)*

which are considerably weighted in favor of seniority in the fire service as well as credit for military service. Persons brought in from outside the profession to command local fire organizations inevitably find that promotion from the ranks is an unwritten rule in the American fire service, which no person, however competent, can successfully violate. After 25 years service and upon reaching 55 or 60 years of age, firemen, including officers, retire at one-half to three-quarters of their highest annual pay. Generous pensions are also granted for disability and for widows of firemen killed in performance of their duty.

The average fire department in an American city of 100,000 population would answer about 1,200 alarms in a year, of which 542 would be building fires. The balance would consist of grass, rubbish, automobile and other miscellaneous fires, emergency calls and false alarms.

An average city of 100,000 population would employ between 150 and 200 firemen and officers. These would be organized into an average of 10 engine and 4 ladder companies divided into 3 or 4 battalions or districts.

In America, fire prevention work and the enforcement of municipal fire laws and ordinances is a fire department function carried out by the fire prevention bureau of the fire department. Except in a few large cities, fire patrol or salvage operations are also a fire department function.

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Official U. S. Navy Photograph

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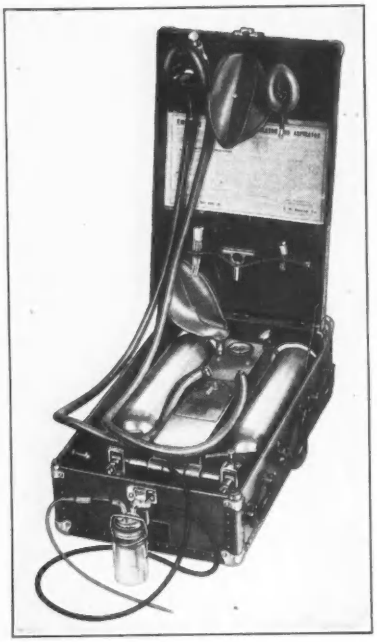
# SMOKE WILL KNOCK-OUT THE BEST OF MEN!



That's when you need an

# EMERSON RESUSCITATOR

**Smoke suffocation, like carbon monoxide poisoning, can strike at any time, and without warning. When it does, be ready with the best resuscitator money can buy. You can't afford to do less!**

•

**Write for literature or a demonstration at your department**

**J. H. EMERSON CO.**
**24 Cottage Park Ave., Cambridge, Mass.**
Representatives in Principal Cities


**MEMBERSHIP PLAN**

Through the Volunteer Firemen's Section, fire companies may become members of the National Fire Protection Association. As a member fire company, the department receives at headquarters a set of all regular N.F.P.A. publications. This includes the Quarterly, the monthly News Letter, posters and bulletins.

Each member fire company has the Volunteer Firemen magazine sent to the homes of ten men at no extra charge beyond the ten dollars annual dues paid by all associate members of the N.F.P.A. All other N.F.P.A. members pay ten dollars without the ten copies of Volunteer Firemen.

If more than ten firemen want to receive Volunteer Firemen, an additional dollar should be sent for each extra fireman listed to receive the magazine. Individual subscriptions are not accepted from departments not members of the N.F.P.A.

## N. F. P. A. Volunteer Firemen's Section
# MEMBERSHIP REPORT

AMONG the newly enrolled members of the N.F.P.A. is a group of volunteers who call themselves the Branchholders Club of London, England. This is an organization begun last October by a group of part-time firemen and fire women who have served for a number of years at a North London station. The basic idea was to provide a center where members could continue friendly contacts after the war. Membership now is extended to full-time firemen and members of the National Fire Service. It is planned to reserve an evening each fortnight for the discussion of fire prevention and similar subjects.

Many an American fireman may not appreciate the part played by the "part-timers" in wartime Britain or the hours they contribute to the fire service. A number of the members of the Brancholders Club joined the fire service as far back as 1938 and served throughout the Blitz.

The 19 new companies in the Section this month bring the total enrollment to 1,116 companies.

Colorado Board for Vocational Education, Denver, Colo.
Palos Heights Volunteer Fire Department, Palos Heights, Ill.
Mooreland Fire Department, Mooreland, Ind.
Northeast Harbor Fire Company, Inc., Northeast Harbor, Maine
Bowmans Add. Volunteer Fire Company, Cumberland, Md.
Southfield Township Fire Department, Birmingham, Mich.
Comstock Fire District No. 1, Comstock, Mich.
Jonesville Fire Department, Jonesville, Mich.
Taconite Fire Department, Taconite, Minn.
Portageville Fire Department, Portageville, Mo.
Livingston Fire Department, Livingston, Mont.
Alva U. Willis Volunteer Fire Company, Batavia, N. Y.
Anderson Township Fire Department, Cincinnati, Ohio
Gap Fire Company, Gap, Pa.
Norwood Fire Company, Norwood, Pa.
East Berkshire Fire Department, East Berkshire, Vt.
McChord Field Fire Department, McChord Field, Tacoma, Wash.
Salem Volunteer Fire Department, Salem, Wis.
West Corner Brook Fire Brigade, West Corner Brook, Newfoundland.

*Bettmann Archive*

GUEST: "I am not a peddler. This is my personal fire extinguisher. I wouldn't stay in any hotel without it." — *Caption of 1872 cartoon.*

Perhaps the conditions are not much better in many hotels today!—ED.

# "You Have Won For The Third Time The Army-Navy Production Award"

ROBERT P. PATTERSON
UNDER SECRETARY OF WAR

WAR DEPARTMENT
OFFICE OF THE UNDER SECRETARY
WASHINGTON, D. C.

13 January 1945

To the Men and Women
of the Chippewa Falls and Chicago Avenue Plants
W. S. Darley & Company
2801 Washington Boulevard
Chicago, Illinois

I am pleased to inform you that you have won for the third time the Army-Navy Production Award for high achievement in the production of war materiel.

In maintaining the fine record which first brought you distinction, you have set an inspiring example for your fellow Americans on the production front.

This second renewal adds a second White Star to your Army-Navy Production Award flag, and stands as a symbol of your great and continuing contribution to the cause of freedom.

Sincerely yours,

Robert P. Patterson
Under Secretary of War

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Fire Fighting
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High Pressure
Fog Pumpers

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Trailer and Skid
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Crash Trucks

# W. S. DARLEY & CO. CHICAGO, 12 ILLINOIS

## THIS DUGAS *SCREEN*

### SHIELDS FIRE-FIGHTERS

● Dense clouds of fire-killing dry chemical create a real "heat-shielding screen" for the operator whenever a DUGAS Fire Extinguisher, charged with PLUS-FIFTY DUGAS Dry Chemical, is used to beat down a blaze.

All DUGAS Fire Extinguishers—large and small—are designed with fire-fighter protection as well as fire-fighting effectiveness in mind—a big reason why workers who may have to be fire-fighters feel more confident when they see DUGAS equipment close at hand.

*Non-toxic, non-corrosive and non-abrasive. Approved by Underwriters' Laboratories and Factory Mutual Laboratories.*

DUGAS 15-T HAND EXTINGUISHER

DUGAS 150 WHEELED EXTINGUISHER

ANSUL CHEMICAL COMPANY
MARINETTE, WISCONSIN
DUGAS DIVISION


# BLAZING OIL WELL FIRE AT HUNTINGTON BEACH, CAL.

FIGHTING oil well fires is something of a specialty and probably not all firemen know how it is done. Accordingly, a report received by the N.F.P.A. from Chief J. K. Sargeant, of Huntington Beach, California, in which he describes a big oil well blaze late last November, may be of considerable interest to fellow fire fighters. The fire occurred in an oil well operated by the Producing Department of the Standard Oil Company. It broke out at 8:00 A.M. on a Sunday morning. Workmen were pulling a drill pipe out of the well hole, presumably to change bits, when the gas, 2,000 pounds pressure, followed up the well and "blew in" before they had all of the drill pipe out of the hole. The fire was started almost immediately by a spark from a rock which struck the steel girts on the rig. Of course, the fire was out of control immediately. An alarm was telephoned to the fire department which responded with two city fire pumpers and one county owned pumper. The fire was fought from 8:00 A.M. Sunday until 8:00 P.M. Tuesday to keep it from spreading to a gasoline plant and to a butane refilling station across the street. The fire was kept on the oil company property, but mud and rocks were thrown for half a mile in all directions. The well, at which the fire occurred, was approximately 100 feet high, of steel rig construction with wooden floor and pipe rack. The well was under very capable management, but accidents of this nature are likely when drilling operations run into high pressure sands. While the fire was confined to the rig itself, it caused damage to motors and other equipment, and in addition, rocks tore the well rig to pieces and ruined additional equipment. There was also considerable mud damage.

**A deluge stream directed at the base of the blazing oil well to mix moisture with the escaping oil and gas and prevent re-ignition.**

**This well blew in at 2,000 lbs. pressure before workmen had all of the work pipe removed. Mud and rocks were thrown for half a mile in all directions.**

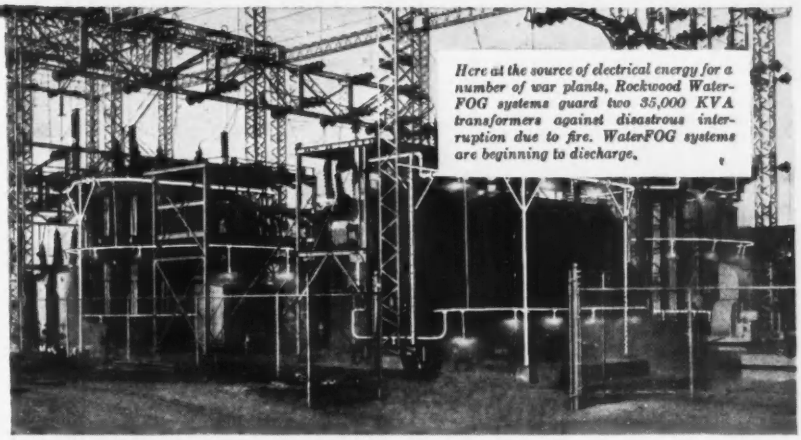
The method used in controlling the fire was mostly by cooling with 2½-inch hose streams. One stream from a deluge set was kept mixing with gas coming from the well hole to apply large amounts of moisture and to prevent ignition. This worked out very well, as the rocks struck a spark there was too much moisture for the fuel to re-ignite.

The water supply was provided by a private water system, partly gravity feed but mostly from high pressure pumps. However, while hydrants were available every 300 feet along the front of the plant this main was only 4 inches in diameter and could supply but one stream. Nine hundred feet away was an 8-inch main which gave a more adequate supply.

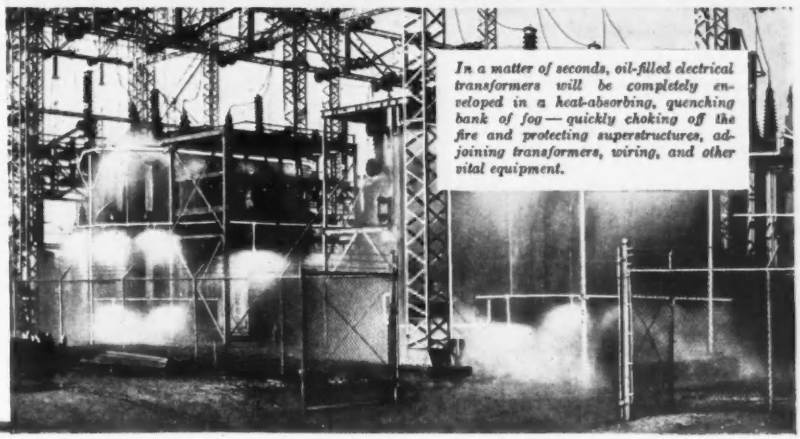
Fortunately the weather was good for fire fighting, as there was not too much wind off the ocean. After the fire, the pumpers were found to be in good shape although lots of sand and mud had been thrown on them. One large rock hit the chief's car making a large dent, but fortunately did not quite penetrate the car. Chief Sargeant reports that they have had a lot of these fires before, but that they generally sand up in a few hours and stop themselves, whereas this well continued to discharge for two days and nights before being brought under control.

# WaterFOG

## Shields The Heart Of A War-Working Community



*Here at the source of electrical energy for a number of war plants, Rockwood WaterFOG systems guard two 35,000 KVA transformers against disastrous interruption due to fire. WaterFOG systems are beginning to discharge.*



*In a matter of seconds, oil-filled electrical transformers will be completely enveloped in a heat-absorbing, quenching bank of fog — quickly choking off the fire and protecting superstructures, adjoining transformers, wiring, and other vital equipment.*

### ROCKWOOD WaterFOG TAKES THE FURY OUT OF OIL FIRES

Now water . . . cheap, plentiful . . . becomes your *surest* means of protecting against fires in flammable liquids — whether in transformers or open tanks.

WaterFOG is safe to use on such fires . . . and completely effective. Its tiny water particles are so highly heat-absorptive (in direct proportion to their fineness) that the fire is rapidly cooled and confined. No splashing and spreading the blaze. No excessive water damage. No danger of water being exhausted.

WaterFOG, fighting fires three ways . . . by quenching the flames, by retarding vaporization, by shutting off oxygen . . . gives you complete protection at lowest cost. And — what is very important — it cools surrounding structures to guard against "flash-back"

Rockwood WaterFOG is created by impinging streams of water at scientifically-determined angles — correctly engineered for particle size, fog pattern, and velocity. Rockwood-engineered fixed installations approved by Underwriters' Laboratories and Associated Factory Mutuals.

Nozzles and applicators for fire hose lines also available. Colored movies (16 mm.) showing tests of Rockwood WaterFOG are available to business executives. Write for Bulletin 123.

**ROCKWOOD SPRINKLER COMPANY**
88 Harlow Street, Worcester 5, Mass.
***Specialists in Fire Protection Engineering, Equipment and Installation since 1907***

**TYPICAL WaterFOG APPLICATIONS ARE:**

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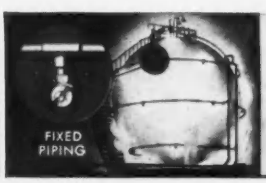
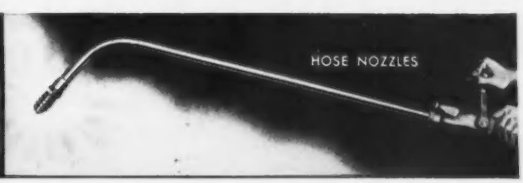
| transformers | generators |
| oil switches | paint shops |
| control rooms | oil storage, etc. |

*Water Engineered by Rockwood Cools, Confines, Smothers Oil Fires*

ROCKWOOD WaterFOG



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SIRENO WITH 7-INCH
RED FLASHING LIGHT

THE UTMOST IN
DEPENDABILTY
AND
LONG LIFE

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The SIRENO CO., Inc.
214 WILLIAM STREET
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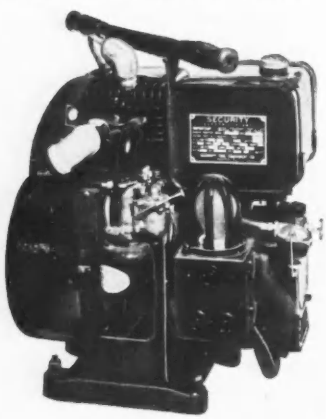
PORTABLE
FLOODLIGHTING
GENERATING PLANT



This 1500 watt portable generator, with 25% reserve, especially designed for fire department service. Lightweight, rugged and compact. Air-cooled 4-cycle engine 2¾" bore x 2¾" stroke. Quick starting. Fully guaranteed, thoroughly dependable.

Also from 600 to 2500 Watts in A.C. and D.C.

*Write for Catalog*

SECURITY FIRE EQUIPMENT CO.
1550 Princeton Ave. Trenton, N. J.

# MANUFACTURERS' ANNOUNCEMENTS

### Buffalo Fire Appliance Corporation Celebrates Golden Anniversary

THE BUFFALO FIRE APPLIANCE CORPORATION whose factory is located at 44 Central Avenue, Buffalo and Executive Offices in the M & T Bank Building in Buffalo, is this year celebrating its fiftieth year in business.

Starting in the year 1895 in a small loft space at 15 Wells Street in Buffalo, the Company within a very few years had become an important manufacturer of fire extinguishers and its products were distributed by mill supply houses and wholesale hardware companies throughout the United States.

In 1916 when horse-drawn fire apparatus were rapidly disappearing from many city fire departments, the Company entered the manufacture of motor driven fire apparatus. From the very beginning its equipment found an ever increasing demand among municipalities until today the Company has become one of the leaders in the manufacture of this type of equipment as well as the manufacture of fire extinguishers.

The Company was founded by George R. Stephens, who carried on as the active head of the business until his death in 1938. Since that time the Company has been under the management of Charles H. Stephens, a son of the founder, and now president of the Company.

In commenting on the fiftieth anniversary of the Company, Mr. Stephens said that in looking back, it seemed to be a succession of moves to larger quarters or of building additions to the factory to keep up with the ever increasing demands for the fire fighting equipment which the Company manufactures.

●

### Foam Applicators for Use On Oil Tank Fires Again Made Available

AMERICAN-LaFRANCE-FOAMITE CORPORATION, Elmira, New York, has issued a new illustrated folder describing the various types of foam applicators again made available by the Government release of aluminum, for some time unprocurable for this purpose due to war conditions. Flammable liquids in storage present a constant fire hazard. To safeguard these fluids from loss by fire, foam application has long been recognized as one of the best possible answers, and vast quantities of oil in storage are protected by fixed piping systems. As there are many oil storage risks, however, without this fixed, permanent means of foam delivery, the Foamite Applicator is again made available to meet emergency conditions. The new folder is free upon request. It describes applicators suitable for both land and marine service.

### "Art" Espey Now with Cardox Corporation

"ART" ESPEY (member N.F.P.A.), known to most Eastern firemen as former head of the Pennsylvania Fire School, has joined the staff of the Cardox Corporation, Fire Division, with headquarters in Philadelphia. According to an announcement by the company, "Art" is now District Engineer for the territory embracing Pennsylvania, Delaware, Maryland, West Virginia, Western New York and Southern New Jersey. This is an area where "Art" can call the majority of fire protection people by their first names and they join us, we are sure, in wishing him every success.

FOR SALE

**Darley Champion 200-g.p.m. skid-mounted portable fire pump powered by Hercules 4-cylinder motor. Can be carried by two men! Price including two 10-foot sections of hard suction hose with strainer and foot valve: $350. F.O.B. For details write Chief Edgar A. Spotz, Hummelstown, Pa.**

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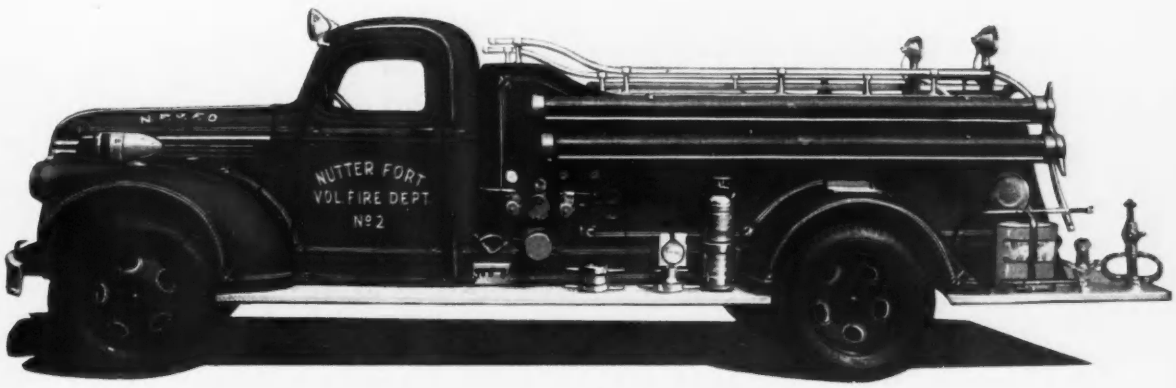
FIRE APPARATUS **OREN** CUSTOM BUILT

*"THE SOUTH'S ONLY FIRE TRUCK MANUFACTURER"*

MODERNIZES ANOTHER DEPARTMENT WITH A CUSTOM BUILT UNIT




This Custom-Built **OREN** is a triple combination pumper with a 500 G. P. M. Hale Centrifugal Pump and 200 gallon booster tank. Mounted on Chevrolet chassis and used for town and rural fire fighting work at Nutter Fort, West Virginia. Safe working pressure of pump up to 400 pounds.

EACH TRUCK IS BUILT AND DESIGNED TO MEET THE INDIVIDUAL NEEDS OF THE PURCHASING FIRE DEPARTMENT

# OREN FIRE APPARATUS COMPANY

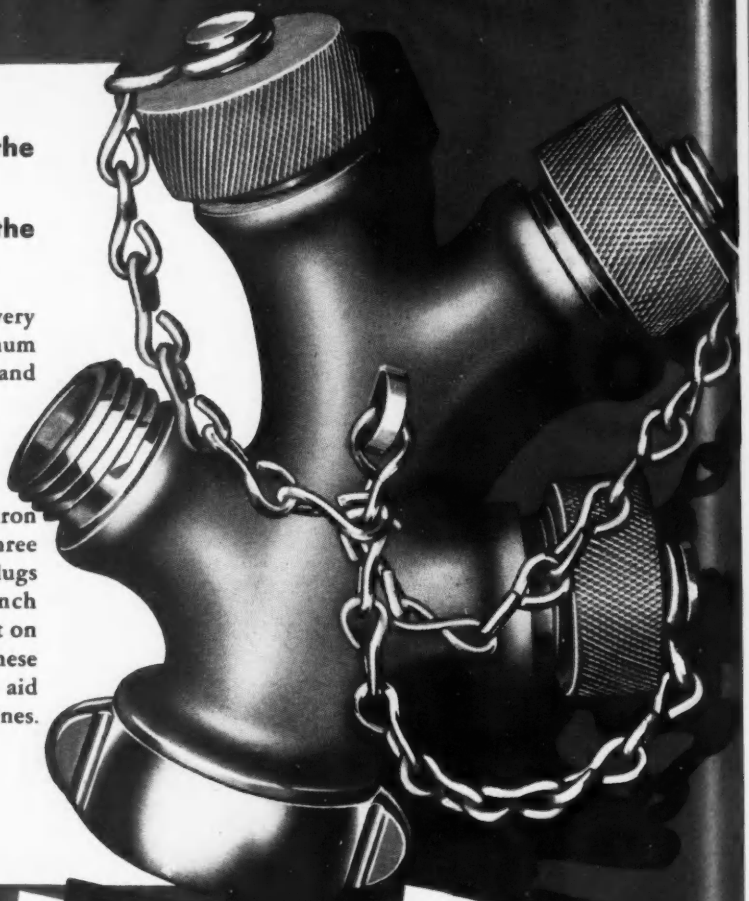
1201-9 West Salem Avenue, Roanoke, Virginia

# AKRON Siamese Connections

**To unite hose lines to increase the volume of discharge.**

**To divide hose lines to increase the number of hose discharges.**

Akron Siamese Connections assure delivery of desired volume of water with a minimum friction loss. Ruggedly constructed to stand up under severe service.



***Important Features***

All 2½" female threaded swivels on Akron Siamese Connections are provided with three lugs, either rocker or pin, so that two lugs are always accessible for spanner wrench engagement. Rocker shaped legs are cast on bottom of all 1½" or larger Akron Siamese Connections to protect threads and to aid in connecting or disconnecting hose lines.

**AKRON BRASS**
**MFG. COMPANY, INC.**
**WOOSTER, OHIO**

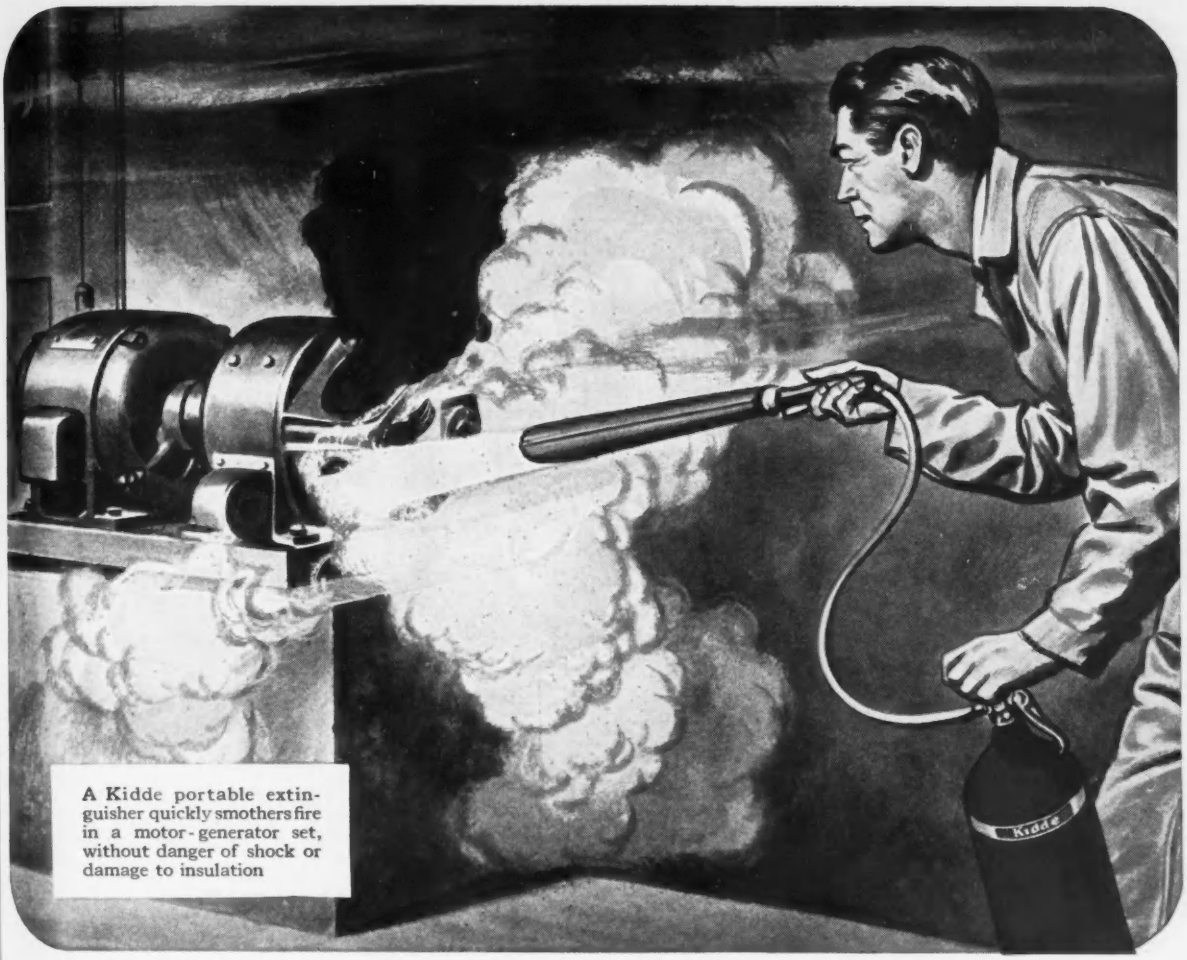
Style 264
with Caps and Chain

Style 278
Three outlets

Style 277
Two outlets

# AKRON BRASS

FIRE FIGHTING EQUIPMENT




A Kidde portable extinguisher quickly smothers fire in a motor-generator set, without danger of shock or damage to insulation

# KIDDE EQUIPMENT HITS THE HOT SPOTS
## to put tough fires out!

Even a small blaze in electrical equipment — or flammable liquids — may quickly flare into a serious fire...unless the *right* extinguisher gets to work fast.

Ordinary water-type extinguishers cannot stop these tough Class C and Class B fires. But a Kidde portable — approved by both Underwriters' and Factory Mutual Laboratories — chokes them off quickly and safely.

If a blaze breaks out in *electrical equipment,* non-conducting carbon dioxide keeps the operator safe from the danger of shock, while it swirls around corners and penetrates crevices to extinguish every flicker of flame. Dry and inert, the gas does not damage the equipment or rot the insulation.

When *liquids* catch fire, a cloud of carbon dioxide gas from the Kidde nozzle forms a thick blanket that smothers the flames . . . then evaporates to leave valuable materials uncontaminated.

Safe, clean, fast — Kidde extinguishing equipment is ready to take on the job of guarding *every* tough-fire area in your plant. Check the accompanying list of hazardous locations — then ask a Kidde representative to show you how best to protect them.

**KIDDE KILLS TOUGH FIRES**

MG Sets
Process Rooms
Ovens
Spreaders
Motors
Storage Rooms
Mixers
Coaters
Transformers
Dip Tanks
Agitators
Washing Trays
Control Panels

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**Walter Kidde & Company, Inc. • 140 Cedar Street, New York 6, N. Y.**

THIS ADVERTISEMENT IS ONE OF A SERIES APPEARING CURRENTLY IN INDUSTRIAL PUBLICATIONS

# Quick!

## *Positive* SQUEEZ-GRIP *KILLS FIRE in seconds*

Here in four simple hand movements we come to grips with modern fire protection. Carbon dioxide gas, the fastest non-damaging fire extinguishing agent, is stored under high pressure in portable cylinders. The rapid release of the fire killing gas with the new SQUEEZ-GRIP valve saves time and gas. There is no wheel to turn. No need to set the cylinder down to operate it. C-O-TWO gas can be discharged or stopped as quickly as you can close or open your hand. In fact, it's so easy to use that even a woman or a child can operate it and extinguish a fire in seconds.

**SQUEEZ-GRIP, originated and developed by C-O-TWO, is now used by all the Armed Forces. C-O-TWO manufactures a complete line of Portables, Hose Units and Smoke Detecting Systems.**

**KILLS FIRE—SAVES LIVES—*It's Safer—It's Faster—It's Modern***

**C-O-TWO FIRE EQUIPMENT COMPANY**

NEWARK 1 NEW JERSEY

Buffalo 750 Triple Combination
Pumper as built for Baker, Oregon

# SAFE

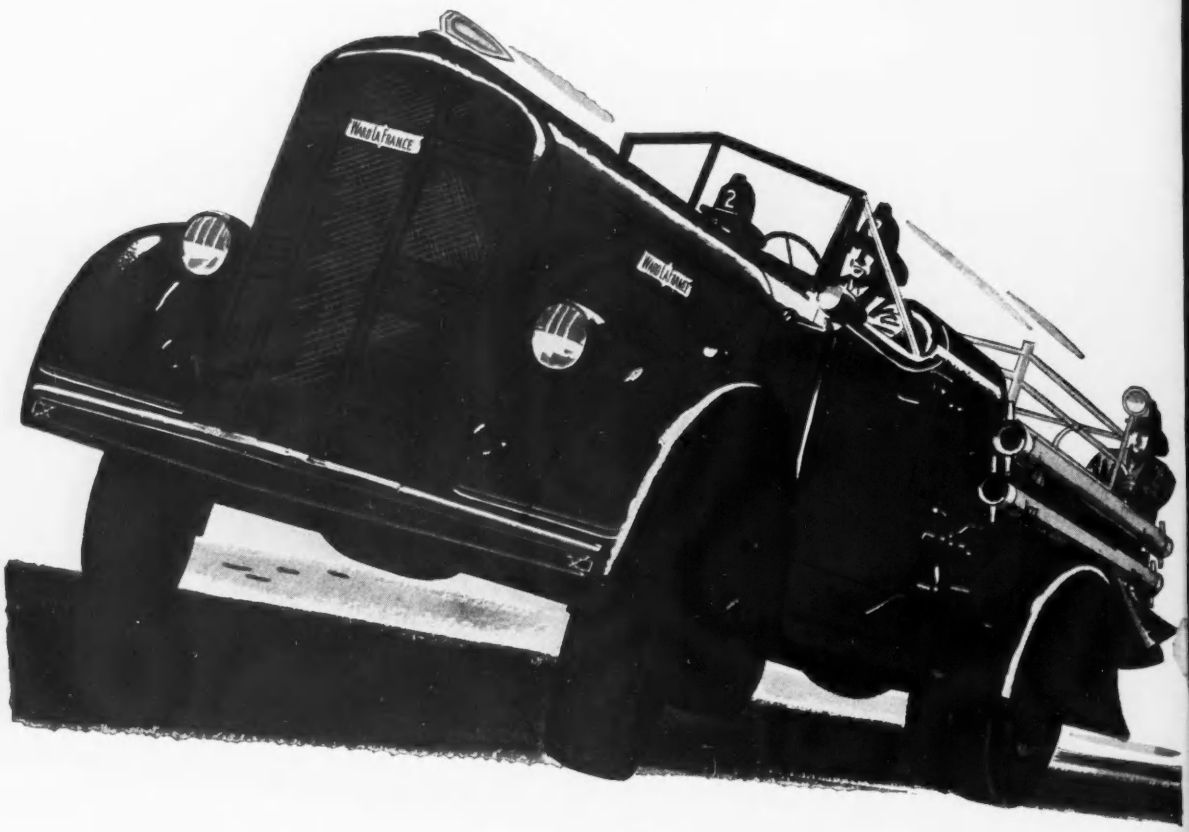
RESERVED POWER

1895 - 1945
GOLDEN ANNIVERSARY
50 Years of Service

## BUFFALO FIRE APPLIANCE CORPORATION

BUFFALO 2 ★ ★ ★ ★ NEW YORK

# PREDETERMINED PERFORMANCE




The first five minutes at a blaze are worth the next five hours! Lack of prompt action is responsible for the fact that a mere 1% of all fires accounts for 65% of our national fire loss. Reliable engine performance is necessary if fires are to be reached quickly. That is why all Ward LaFrance fire apparatus is equipped with an engine specially built for prompt fire-fighting service. These Ward LaFrance engines can be depended upon to furnish the required horsepower, because apparatus capacities, as well as pump performance, are accurately predetermined. Our engineers will be glad to work on your particular problems and offer sound recommendations that you can depend upon . . . Why not investigate the advantages of predetermined performance by writing today?

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**TRUCK DIVISION**

**GREAT AMERICAN INDUSTRIES, INC.**

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